Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10103212

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Steve Gridley

ADDRESS:

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10103212

PAGE:

1 of 4

PO#:

PHONE:

FAX:

(607) 731-0145

(607) 562-4001

TEST REPORT

PWS ID#

Pad

RECEIVED FOR LAB BY: TJC

DATE: 10/21/2010 11:37

Page 1 of 4

SAMPLE: Flowback Sand		Lab I	D: 10103212-001A	Compo	site		
SAMPLED BY: SG	Sam		e: 10/20/2010 19:09	~~,pu			
Jun ELD D1. 00	Ozm	۱۱۱۱ ک.م	S. ISPECIEURO IGIO	SLOQ			
<u>Test</u>	Result		Method		Analysis Start	Analysis End	
Methanol	16 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Ethanol	13 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Isopropanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
t-Butanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
n-Propanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Isobutanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
n-Butanol	14 mg/Kg	N	Aicohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Sodium	< 64.9 mg/Kg-dry		EPA 6010B	64.9	10/22/10 10:40	10/22/10	RMD-CV
Bromine	< 0.46 mg/L	N'	HACH 8167	0.46	10/25/10 15:25	10/25/10	TLB-CV
1,1-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Methylene chloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
2-Butanone	< 0.203 mg/Kg-dry		EPA 8260B	0.203	10/25/10 8:30	10/25/10	DN-CV
trans-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
cis-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Chloroform	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,1-Trichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Carbon tetrachloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Benzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Trichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Dibromomethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Bromodichloromethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Analyte detected in the associated Method Blank В
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled U

MANAGER	Carrie	M. Davis	 DATE:	10/27/2010	

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2566 Pennsylvania Ave. Sayre, PA 18840

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Phone: (570) 888-0169 Fax: (570) 888-0717

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NAME:

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Talisman Energy USA, Inc.

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10103212

PAGE:

2 of 4

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TEST REPORT

PWS ID#

PHONE: FAX:

(607) 731-0145 (607) 562-4001

Pad

RECEIVED FOR LAB BY: TJC	DATE	: 10/2	21/2010 11:37			P	age 2 of 4
cis-1,3-Dichloropropene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Toluene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
trans-1,3-Dichloropropene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,2-Trichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Tetrachloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Dibromochloromethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dibromoethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Chlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,1,2-Tetrachioroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Ethylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
m,p-Xylene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
o-Xylene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Bromoform	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2,3-Trichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,3-Dichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,4-Dichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Chloride	< 51.0 mg/Kg-dry		EPA 300.0	51.0	10/22/10 15:07	10/23/10	HDP-CV
Formaldehyde	< 0.9 mg/Kg-dry	N	NIOSH 3500	0.9	10/26/10 8:30	10/26/10	LTW-CV
Percent Moisture	1.4 %		SM2540G		10/25/10 15:00	10/26/10	NFM-SA

SAMPLE: Flowback Sand

SAMPLED BY: SG

Lab ID: 10103212-001B

Composite

Sample Time: 10/20/2010 19:09

SLOQ

Analysis Start Analysis End Analyst * Method Result **Test** 10/26/10 NFM-SA Moisture 1.35 % Moisture Calc. 0.01 10/25/10 15:00

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

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- Analyte detected in the associated Method Blank В
- Parameter is not NELAC certified N
- U Ammonia sample not distilled

Carrie M. Davis **MANAGER**

DATE:

10/27/2010

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NAME: Steve Gridley

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Horseheads, NY 14845

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10103212

PAGE:

3 of 4

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FAX: (607) 562-4001 PWS ID#

Pad RECEIVED FOR LAB BY: TJC DATE: 10/21/2010 11:37 Page 3 of 4 Ammonia as N 19.9 mg/kg-dry Lachat 10.1 10/21/10 12:12 10/21/10 KAL-SA Free Liquid < 0.1 % **EPA 9095A** IC-SA 0.1 10/22/10 15:00 10/22/10 pН 7.27@23.0°C **EPA 9045C** 10/26/10 8:50 10/26/10 NFM-SA **Phosphorus** 24 mg/kg-dry **EPA 365.3** 10/25/10 17:00 10/26/10 JP-SA SAMPLE: Flowback Sand Lab ID: 10103212-001C Composite SAMPLED BY: SG Sample Time: 10/20/2010 19:09 SLOQ Analysis End Analyst * Test Result Method **Analysis Start** Ethylene glycol < 10.00 mg/Kg Glycois 10.00 10/25/10 0:00 10/25/10 Propylene glycol < 10.00 mg/Kg **Glycols** 10.00 10/25/10 0:00 10/25/10 Sample Note: Analysis performed by Summit Environmental Technologies, Inc. Lab ID: 10103212-001D Composite SAMPLE: Flowback Sand SAMPLED BY: SG Sample Time: 10/20/2010 19:09 SLQQ Test Result Method **Analysis Start** Analysis End Analyst * Phenolics, Total Recoverable 13.0 mg/Kg DRY **EPA 9065** 10/25/10 7:30 10/25/10 1.27 Sample Note: Analysis performed by QC Laboratories. SAMPLE: Flowback Sand Lab ID: 10103212-001E Composite SAMPLED BY: SG Sample Time: 10/20/2010 19:09 SLOQ Test Result Method **Analysis Start** Analysis End Analyst * 750 mg/Kg **EPA 9071** 10/23/10 9:00 10/23/10 Total Petroleum Hydrocarbons 170 Sample Note: Analysis performed by Microbac Laboratories, Inc--Erie Division. Lab ID: 10103212-001G Composite SAMPLE: TCLP Leachate of Flowback Sand SAMPLED BY: SG Sample Time: 10/22/2010 7:30 SLOQ Analysis End Analyst * **Test** Result Method Analysis Start < 0.0008 mg/L **EPA 7470A** 10/23/10 10:20 10/24/10 RMD-CV Mercury - TCLP extracted 0.0008 REMARKS:

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MANAGER	Carri M. Davis	DATE:	10/27/2010

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PWS ID#

Pad						
RECEIVED FOR LAB BY: TJC	DATE:	10/21/2010 11:37			F	age 4 of 4
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	10/23/10 11:10	10/23/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Copper - TCLP extracted	0.567 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	10/23/10 11:10	10/23/10	RMD-CV

REMARKS:

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- Analyte detected in the associated Method Blank В
- Parameter is not NELAC certified N
- Ammonia sample not distilled

		DATE.	10/27/2010
MANAGER	Carris	DATE:	10/27/2010

CHAIN OF CUSTODY			1	0	10	32	112 10/21/10 11:37 ELS 10103.	313		PAGE 1	OF1
Talisman / UEG			Tal		Energ	y USA,		• *			
geowetlands@aol.com			Gas	oue ra	u		·	į.		NEEDED: YES /	
twollin@rallysolutions.ca			ATE SA		S	/ov	RESULTS ARE BEI	NG USED F	FOR: PADEP	IF YES, PLEASE ATTA	
CONTACT Steve Gridley	Т	RANS	PORT			GV SV W	GROUND WATER SO SOIL SURFACE WATER HZ HAZARDOUS LAN	DFILL	1	YES	
PH# 607-731-0145		TO)	_	\parallel	DE	DEMONIZED WATER DI DISTILLED WATER DERSONAL OTH	ER	i .	IF YES, PLEASE ATTA	CH REQUIREMENTS
FAX# BILL TO: Talisman PO# COMPLETIONS	- 1	N CO	ICE	_/		PRESIDENTIALS COMPOSITE	H HYDROCHLORIC ACID OH SODIUM HYDROXIDE S SULFURIC ACID AS ASCORBIC ACID , N NITRIC ACID AC ACETIC ACID SO3 SODIUM SULFITE NH4 AMMONIUM CHLORID Thio SODIUM THIOSULFATE ZN ZINC ACETATE - NONE Hg MERCURIC CHLORIDI	E		Plea appli	
SAMPLE PSIGNATURE / AFFILIATION		The Samples	SAME. WE SAMPLING	SAME.	16.77 E.G	POLER MITTAL	An incomplete chain of custody may delay the processing of your sample(s). ANALYSIS TO BE PERFORMED (PER CONTAINER)		PRESENTED ON PECS.	Plea appli	ase fill out all ficable areas ompletely
CONTAINER SAMPLING POINT	18		/ \$	/3	/ 3		ANALYSIS TO BE PERFORMED (PER CONTAINER)	18		/ LAB USE	E ONLY
1 Flowback Sand	שלטו	1909	50	<u>C</u>	\$0	W	TPH, pH, Free Liquids, % Moisture	ig.	: i.,	2	2014-4
2							Chlorides, Sodium, Bromine	3	45. 19		
3 A, Na, Cl Bromine, P.	moi	stı	826	O, Al	col	101	TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se				
4 Formaldehyde							Ag, Cu, Zn, Ni		W.		
5 B. pH, Free Liquid, %	Mol	tur	10,1	phos	11/11	13	Alcohols, Glycols, Formaldehyde	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
6 C. Glycol			<u> </u>				EPA 8260 .				
7 D. Phenol							Total Phosphorus, Total Phenolics				
8 E TPH							Ammonia - Nitrogen	21			
9 F. T. Sample					<u> </u>		,		1		验,甚,强 加。
10 6 TCLP Metalo + Cu,	Ni,	en					72 HOUR TURNAROUND	<i>2</i>			学 选 流
11							DAY TURNAROUND			Due	01/10
DELIVERED BY					S	G	TEMPERATURE UPON RECE	PT	% 2) 2)		LONICE Y/N
RELINQUINTED BY			DATE:	2117	10	TIME:	737 RECEIVED BY:			DATE:	TIME:
RELINQUISHED BY:		_	DATE:	1		TIME:	RECEIVED BY:	?		DATE:	TIME:
RELINQUISHED BY:			DATE:	1	<u>:</u>	TIME:	RECEIVED BY			DATE: 121 1107	TIME 137

-Ad Graphics Printing 570-888-0086



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed o	or legib attache	ust be fully and accurately printed in the spaces disheet as Form 26R, see date on attached sheet	tify Date			NLY neral Notes		
Genera	al Refer	ence 287.54						
Date P	repared	d/Revised Feb	ruary 11, 2011					
		SECTION A.	CLIENT (GENERATOR	ROF THE WASTE) IN	IFORMAT	ION		
Compa	ny Nan	CONTRACTO DO DE PRESENTA DE CONTRACTO DE CON				Mary Control		
		ergy USA Inc.						
		y, Name of Parent Comp	any				3ener	ator ID#
		ergy Inc.				N/A		
-	•	ling Address Line 1 Place	G	ompany Mailing Addre	ss Line 2			
		Iress Last Line – City	State	Zip+4	Phone			Ext
Warre		ness Last Line - Oity	PA	15086	(724) 8°	14-530	0	LAU
		ntact Last Name	First Name	MI		Suffix		
Brown	-		Dina					
Munici				County				
Warre				Allegheny				
• • • • • • • • • • • • • • • • • • • •	t Phon		Contact Email Address					
	314-532		dybrown@talismanusa.c y Mailing Address (noted a				Yes	⊠ No
			eration and storage. Wast		tural gas com			
			at 273 Fellows Creek Road,					
stored								
Manaiai		VA/ a mal	County Tierre		Stat	_	DΛ	
Munici	pality	Ward	County Tioga	E BEOODIDEION	Stat	e	PA	
				E DESCRIPTION	11 %		T T	
Resid Waste			al Waste escription	Amount	Unit of Measur			Time Frame
	Code				cu yd	gal		riane
804		Fracing Fluid Waste (F	low Back Sand)	331		ton		One Time
Ž.			1. GENERAL P	ROPERTIES				
a.	pH Ra		to 9	(based on analyses or k	nowledge)			
b.	Physic	cal State	Liquid Waste (EPA Me					
			Solid (EPA Method 90)					
	Division		Gas (ambient tempera	<u>'</u>	11	.1.		
C.	Physic	cal Appearance	Color Greyish Black Number of Solid or Liquid			arbon		
			•		One			
			Describe each phase of s	eparation. Sand				
			2. CHEMICAL ANALYS	SIS ATTACHMENTS				
а.		sults of a detailed chem	cal characterization of the		n the		Yes	□ No
b.			aste sampling method is a	attached.			Yes	☐ No
C.	The quattach		control procedures employ	yed by the laboratory(i	es) is		Yes	☐ No
d.	The re	sults of the hazardous w	acta determination is atta	ched		X	Yes	□ No
			aste determination is atta	onou.				

	3.	PROCESS DESCRIPTION & SCI	IEMATIC ATTACHME	ENTS						
а.	A detailed description of the r the waste, as specified in the		n control processes	producing	⊠ Yes	☐ No				
b.	A schematic of the manufacture as specified in the instruction		processes producir	ng the waste,	X Yes	No				
C.	c. If portions of the information submitted are confidential, the substantiation for Yes No N/A a confidentiality claim, as described in the instructions, is attached.									
	SECTION	N.C. MANAGEMENT	OF RESIDUAL	WASTE						
		1. Processing or Dispos								
The ar	ea below (ad.) will accommod	ate the identification of two fa	cilities. Attach add	litional sheets	if necessary	•				
a.	Solid waste permit number(s) 100361	for processing or disposal fa	cility being utilized.							
b.	Facility Name	McKean County Landfill								
	Address Line 1	19 Ness Lane								
	Address Line 1			10705						
	Address City State ZIP	Kane	PA No.	16735						
	Municipality	Kane	County Mo	Kean						
C.	Facility Contact Name	Mike Manderfeld								
	Title Phone	General Manager	ail Address ma		-:[
				anderfeld@gm	all.com					
d.	d. Volume of waste shipped to processing or disposal facility in the previous year. 331 □ cu yd □ gal □ lb ☑ ton (check one)									
a.	Solid waste permit number(s)	for processing or disposal fa	cility being utilized.							
b.	Facility Name									
	Address Line 1									
	Address Line 1									
	Address City State ZIP		Consider							
	Municipality		County		-					
C.	Facility Contact Name									
	Title Phone	Em	ail Address							
				···						
d.	Volume of waste shipped to p		in the previous yea b	r. (check one)	ı					
		2. BENEFICIAL	-Use							
a.	Has the waste been approved	for beneficial use?			Yes	⊠ No				
	If "Yes", list the general permi		•							
b.	V 1 C 1 C 1 C									
ы.	Volume of waste beneficially to		b ∏ ton	(check one)						

		SECTION D.	CERTIFICAT	ION
Report and all attached obtaining the informatio	documents n, I verify I that the s	and that based upo that the submitted i ubmission of false in	on my inquiry of nformation is tru formation herein	ar with the information submitted in this Annual those individuals immediately responsible for ie, accurate and complete to the best of my is made subject to the penalties of 18 Pa. C.S. imprisonment.
Check the following, if ap	plicable:			
I certify the inform		red in Section B-1, 0	General Properties	s was supplied to the Department for the year
Form Submitted:		Form 26R		
		Other (specify)	,	
Date Submitted:				
I certify the inform		red in Section B-2, C	Chemical Analysis	s was supplied to the Department for the year
Form Submitted:		Form 26R		
		Other (specify)		
Date Submitted:	***************************************			
I certify the information for the year	•	•	cess Description	and Schematic, was supplied to the Department
Form Submitted:		Form 26R		
		Other (specify)		
Date Submitted:				
Name of Responsible Offi	cial		Title	Environmental Specialist
Dina Brown				<i>f</i>
Signature 14	- 7	yun-	Date	2/25/11

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053413

PAGE:

1 of 5

PO#:

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

PWS ID#

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 1 of 5

SAMPLE: Flowback Sand		Lab I	D: 10053413-001A	Compo	osite	constitution (see to see a constitution property and finish assessment term union	
SAMPLED BY: SG	Sam	ple Tlm	e: 05/24/2010 17:30	0100			
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	505 mg/Kg-dry		EPA 6010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	4.60 mg/kg	N	HACH 8167	0.05	05/26/10 10:23	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Butanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

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	// > .			
MANAGER	Carrie M. Davis	DATE:	6/1/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053413

PAGE:

2 of 5

PO#:

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001 PWS ID#

DCNR58702 Pad 4

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DATE: 05/25/2010 8:54

Page 2 of 5

							250 27 07 0
Toluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrolein	< 2.11 mg/Kg-dry		EPA 8260B	2,11	05/27/10 20:05	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrylonitrile	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Acetone	< 0.422 mg/Kg-dry		EPA 8260B	0.422	05/27/10 20:05	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrahydrofuran	< 0.211 mg/Kg-dry	N	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Bromochioromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

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- Parameter not NELAC certified
- Ammonia sample not distilled

	7		* / * / * O * O	
MANAGER	Carrie M. Davis	DATE:	6/1/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

(607) 731-0145

Horseheads, NY 14845

WO#: 10053413

PAGE: 3 of 5

PO#:

PWS ID#

(607) 562-4001

DCNR58702 Pad 4

PHONE:

FAX:

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Page 3 of 5

KI	CEIVED FOR LAB B1. DLIVIZ	DATI	Z. UJ/	23/2010 0.04			I	age 5 of 5
	1,3-Dichloropropane	< 0.042 mg/Kg-dry	on the second	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	2-Hexanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
	Styrene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	Cumene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	Bromobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	n-Propylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	2-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	4-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	tert-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	sec-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	p-Isopropyltoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	n-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	Hexachlorobutadiene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	Naphthalene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
	Chloride	619 mg/Kg-dry		EPA 300.0	52.8	05/26/10 15:48	05/27/10	HDP-CV
	Formaldehyde	< 1.1 mg/Kg-dry	N	NIOSH 3500	1.1	05/27/10 7:30	05/27/10	LTW-CV
	Percent Moisture	5.3 %	N	SM2540G		05/25/10 11:35	05/27/10	DMB-CV

SAMPLE: Flowback Sand

SAMPLED BY: SG

Lab ID: 10053413-001B Sample Time: 05/24/2010 17:30 Composite

SLOQ Test Result Method Analysis Start Analysis End Analyst* Ammonia as N < 11 mg/kg-dry U Lachat 11 05/27/10 12:00 05/27/10 JP-SA EPA 9095A < 0.1 % Free Liquid 0.1 05/25/10 11:55 05/25/10 IC-SA

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MANAGER	Carri M. Davis	DA	ATE: 6/1/2010	

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2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

10053413

4 of 5

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

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PWS ID#

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PAGE:

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

DCNR58702 Pad 4

DCNR58702 Pad 4						
RECEIVED FOR LAB BY: DLM2	DATE:	05/25/2010 8:54			P	age 4 of 5
рН	7.74@22.6°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA
SAMPLE: Flowback Sand	L	ab ID: 10053413-001C	Comp	osite		
SAMPLED BY: SG	Sample	Time: 05/24/2010 17:30	SLOQ			
Test	Result	Method	SLOG	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Sample Note: Analysis performed	l by Life Science					
SAMPLE: Flowback Sand	L	ab ID: 10053413-001D	Compo	osite		
SAMPLED BY: SG	Sample	Time: 05/24/2010 17:30				
	Ph 11		SLOQ			
<u>Test</u>	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable Sample Note: Analysis performed	5.34 mg/Kg DRY	EPA 9065	1.35	05/27/10 8:45	05/27/10	
) ID 40050440 0045				
SAMPLE: Flowback Sand		ab ID: 10053413-001E	Compo	site		
SAMPLED BY: SG	Sample	Time: 05/24/2010 17:30	SLQQ			
<u>Test</u>	Result	<u>Method</u>	OLOG	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	4490 mg/Kg	EPA 9071		05/26/10 11:00	05/26/10	
Sample Note: Analysis performed	by Microbac- Erie					
SAMPLE: TCLP Leachate of Flowba	ack Sand L	ab ID: 10053413-001G	Compo	osite		
SAMPLED BY: SG	Sample	Time: 05/26/2010 7:50				
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analust +
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/26/10 13:30	05/27/10	Analyst * JRA-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00		GSR-CV
A COLLIG LOFT AVILONIA	· d.oob mg/L	E. 11.0010D	0.000	\$\$2010 17.00	OGIZITIO	CORTO

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

EPA 6010B

EPA 6010B

10.00 05/26/10 14:00

0.100 05/26/10 14:00

05/27/10

05/27/10

GSR-CV

GSR-CV

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

< 10.00 mg/L

< 0.100 mg/L

- Parameter not NELAC certified
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Barium - TCLP extracted

Cadmium - TCLP extracted

MANAGER	Carri M. Davis	DATE:	6/1/2010

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10053413

PAGE:

5 of 5

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TEST REPORT

PWS ID#

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2 DATE: 05/25/2010 8:54 Page 5 of 5 Chromium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 05/26/10 14:00 05/27/10 **GSR-CV** Copper - TCLP extracted 0.146 mg/L 0.100 05/26/10 14:00 05/27/10 **EPA 6010B GSR-CV** Lead - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 05/26/10 14:00 05/27/10 **GSR-CV** Nickel - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 05/26/10 14:00 05/27/10 **GSR-CV** Selenium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 05/26/10 14:00 05/27/10 **GSR-CV** Silver - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 05/26/10 14:00 05/27/10 GSR-CV Zinc - TCLP extracted < 0.200 mg/L 0.200 05/26/10 14:00 **EPA 6010B** 05/27/10 **GSR-CV**

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Parameter not NELAC certified N

Ammonia sample not distilled

	71		
MANAGER	Carri M. Davis	DATE:	6/1/2010

CHAIN OF CUSTODY						_	•						PAGE_	1	OF1	
REPORT TO: Talisman / UEG					2!	56(
geowetlands@aol.com	1												ı	CIAL DETECT		
twollin@rallysolutions.ca	REF	RIGER	ATF SA	AMPI F	s		W/	O#: 100)53413	3			-	YES /		1.
i i i i i i i i i i i i i i i i i i i		ER CO			.0	/DW	ORINKING WATE	ER SL SLUDGE	НООТИ	I √ I NYD€C		FOR:	l l	LEASE ATTAC		
CONTACT	4					GW	GROUND WATER	R SO SOIL				PADEP	' IS		VGE NEEDED?	
CONTACT Steve Gridley	_ ⊺	FRANS			,	/ w	WASTE WATER	OTHER	In	LANDFIL	L	-10-10-10-10-10-10-10-10-10-10-10-10-10-	•	YES [
PH# 607-731-0145 FAX#	4 ,	T(ABOR	_	ſ		DE	DEKONIZED WAT	TER DI DISTILLED I POROCHLORIC ACID O	WATER PERSONAL H SODIUM HYDR				IFYES, PI	EASE ATTAC	CHREQUIREM	ENTS
BILL TO: Talisman	3	IN CO	OLER	ı			/ /s su	JLFURIC ACID A	S ASCORBIC ACI				/ /	<i>§</i> /		
Jan Talisman		WITH	ICE		/ /	\ <i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	\$0 ₁ SC	ODIUM SULFITE N	H ₄ AMMONIUM CI				5 / 3 5	/		
PO# COMPLETIONS	1	7	1,	, 7		8	Thio SC - NC	ODIUM THIOSULFATE ZI ONE H		9				,		
PROJECT DESCRIPTION Pad 4	1	/8	SALE OF SAMPLING	SALES HANDEN	/ "	PRECE MITMLS COMPOSITE	/4/	An incomplete chain of		ay the		Person Control of the	SERVINE ADEO ON RES	Pieas apolio	se fill out all cable areas	
SAMPLER SIGNATURE / AFFILIATION	1 /	A LANGE	\$ /	18 /	£ /			processing of y	rour sample(s).					CO	mpletely	
CONTAINER SAMPLING POINT	1/\$	Thus Sound ED	y / \$					ANALYSIS TO BE PERF	ORMED	,						
	/	/	/	-	-			(PER CONTAINEI	P)	/	ۍ حمد	/ &	/			a
1 Flowback Sand	1/24	1730	50	C	50-	N		ee Liquids, % Mo)01A+j	51
2	<u> </u>	<u> </u>	<u> </u>		<u></u>	<u> </u>	Chlorides, S	Sodium, Bromin	e	2.0						
3	<u> </u>						TCLP Meta	als: Ar, Ba, Cd, (Cr, Pb, Hg, S	Se			等在15年。 6人第6人的自			
4 A-Na, CI, Bromine, Alcoi	nol,	PM	gist_	82	60	:	Ag, Cu, Zı	n, Ni		ĝ						
5 V Formal dehyde						:	Alcohols, C	Blycols, Formald	lehyde	94 24						
6 B pH, Free Liquid, Phos	NH.	3					EPA 8260									
7 C- Glycol						<u> </u>	Total Phos	phorus, Total Pl	henolics							
8 D. Phenol						<u> </u>	Ammonia -	Nitrogen		A.						
9 E . TPH						<u> </u>				14. 18.	凝聚					
10 F. T. Sample							98	_ HOUR TURN	AROUND	1. 21						關區
11 G Tell Hotals+Cu,Ni	120	<u></u>		Ĺ			<u> </u>	_ DAY TURNAF	ROUND	25. 25.	Ħ.					
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Ad Graphics Printing 570-868-0685



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed o	or legib attache	ly printed in t d sheet as f	red information must ace is necessary, iden er and identify the d noted below.	tify Date	598+0.015+1.035-20450gip	SE®ONLY d & General Notes		
Genera	al Refer	ence 287.54						
Date P	repared	d/Revised	Feb	oruary 11, 2011				
		SECT	TION A.	CLIENT (GENERATOR	OF THE WASTE) IN	IFORMAT	ION	
Compa	nv Nar	CONTRACTOR OF CONTRACTOR OF THE BOOK OF THE SECOND OF THE						
		ergy USA Inc						
		y, Name of Pa		any			EPA G	Senerator ID#
		ergy Inc.					N/A	
-	-	ling Address	Line 1	C	ompany Mailing Addre	ss Line 2		
		Place			4	- DI		
Compa Warrei		dress Last Lir	ne – City	State PA	Zip+4 15086	Phone	14 520	Ext
		ntact Last Nar	ma	First Name	15060 MI	(724) 8	Suffix	
Brown	-	itact Last Hai	116	Dina	1411		Julia	
Munici					County			
Warrei					Allegheny			
Contac	t Phon	е	Ext	Contact Email Address				
(724)8				dybrown@talismanusa.c				
				y Mailing Address (noted a		_		Yes 🛛 No
If 'No',	descrit	oe location of	waste gen	eration and storage. Wast	e is generated during na	tural gas com	pletion o	operations at the
stored		002 well pad s	site located	at 374 Fellows Creek Road,	ward Township, Hoga (Jounty, PA. 1	ne wast	e is temporarily
Stored	Jusite.							
Munici	pality	Ward		County Tioga		Stat	e	PA
Munici	pality	Ward			E DESCRIPTION	Stat	e	PA
Munici		Ward			E DESCRIPTION	Stat Unit of		PA Time
	dual	Ward	Residu	SECTION B. WAST	E DESCRIPTION Amount	Unit of Measure		
Resid	dual		Residu Code D	SECTION B. WAST		Unit of Measure	e] gal	Time Frame
Resid Waste	dual		Residu Code D	SECTION B. WAST ual Waste escription Flow Back Sand)	Amount 369	Unit of Measure	e	Time
Resid Waste 804	dual Code	Fracing Flu	Residu Code D id Waste (I	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P	Amount 369 -	Unit of Measure	e] gal	Time Frame
Resid Waste	dual Code pH Ra	Fracing Flu	Residu Code D	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P to 9	Amount 369 ROPERTIES (based on analyses or k	Unit of Measure	e] gal	Time Frame
Resid Waste 804	dual Code pH Ra	Fracing Flu	Residu Code D id Waste (I	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me	Amount 369 ROPERTIES (based on analyses or key thod 9095)	Unit of Measure	e] gal	Time Frame
Resid Waste 804	dual Code pH Ra	Fracing Flu	Residu Code D id Waste (I	SECTION B. WAST Jal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909)	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95)	Unit of Measure	e] gal	Time Frame
Resid Waste 804	dual Code pH Ra Physic	Fracing Flu	Residu Code D id Waste (I	SECTION B. WAST Jal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909) Gas (ambient tempera	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure)	Unit of Measure upd	e gal	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	Fracing Fluinge cal State	Residu Code D id Waste (I	SECTION B. WAST Jal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909) Gas (ambient tempera	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Oddo	Unit of Measure Cu yd Ib Snowledge)	e gal	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	Fracing Fluinge cal State	Residu Code D id Waste (I	SECTION B. WAST Jal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera Color Greyish Black	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd Phases of Separation	Unit of Measure Cu yd Dib Snowledge)	e gal	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	Fracing Fluinge cal State	Residu Code D id Waste (I	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient temperated Color Greyish Black Number of Solid or Liquid Describe each phase of secribe	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	Unit of Measure Cu yd Dib Snowledge)	e gal	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	Fracing Fluinge cal State	Residu Code D id Waste (I	SECTION B. WAST Lal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	Unit of Measure Cu yd Dib Disnowledge) Pr Hydroca One	gal don	Time Frame One Time
Resid Waste 804 a. b.	pH Ra Physic	Fracing Fluinge cal State	Residu Code D id Waste (I	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient temperated Color Greyish Black Number of Solid or Liquid Describe each phase of secribe	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	Unit of Measure Cu yd Dib Disnowledge) Pr Hydroca One	e gal	Time Frame One Time
Resid Waste 804 a. b.	pH Ra Physic Physic The re instruct A deta	Fracing Fluinge cal State cal Appearance sults of a detections, is attailed descripti	Residu Code D id Waste (I	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Method 90) Gas (ambient temperator of Solid or Liquid Describe each phase of second characterization of the content of t	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described in attached.	Unit of Measure Cu yd Dib Snowledge) The Hydroca One The Hydroca One	gal gal ton arbon	Time Frame One Time
Resid Waste 804 a. b.	pH Ra Physic Physic The re instruc A deta The qu	Fracing Fluinge cal State cal Appearance cal Appearance citions, is attailed descriptionality assurance.	Residu Code D id Waste (I	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient temperal Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS ical characterization of the	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described in attached.	Unit of Measure Cu yd Dib Snowledge) The Hydroca One The Hydroca One	gal don dent dent dent dent dent dent dent den	Time Frame One Time
Resid Waste 804 a. b.	pH Ra Physic Physic The re instruc A deta The quattach	Fracing Fluinge cal State cal Appearance cal Appearance cal descriptions, is attailed descriptionality assuranced.	Residu Code D id Waste (I 6 ce	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Method 90) Gas (ambient temperator of Solid or Liquid Describe each phase of second characterization of the content of t	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd I Phases of Separation eparation. Sand SIS ATTACHMENTS E waste, as described in attached. yed by the laboratory(in	Unit of Measure Cu yd Dib Snowledge) The Hydroca One The Hydroca One	gal don dent dent dent dent dent dent dent den	Time Frame One Time Ves No
Resid Waste 804 a. b. c.	pH Ra Physic Physic The re instruc A deta The quattach The re If appli	Fracing Fluinge cal State sults of a detections, is attailed descriptionality assuranced. sults of the hicable, a deta	Residu Code D id Waste (I 6 ce ailed chem ched. on of the wace/quality of azardous was iled explan	SECTION B. WAST Jal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS ical characterization of the raste sampling method is a control procedures employ	Amount 369 ROPERTIES (based on analyses or key thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described in the second sec	Unit of Measure Cu yd Dib Snowledge) The Hydroca One The Hydroca One	e gal gal ton arbon	Time Frame One Time No Yes No Yes No

, is		PROCESS DESCRIPTION & SCHI									
a.	A detailed description of the the waste, as specified in the	nanufacturing and/or pollution instructions, is attached.	control processes p	roducing	⊠ Yes	☐ No					
b.	A schematic of the manufacture as specified in the instruction	ring and/or pollution control pr s, is attached.	ocesses producing	the waste,	Yes	☐ No					
C.		submitted are confidential, the cribed in the instructions, is at		Yes	No	⊠ N/A					
	SECTION	ON C. MANAGEMENT C	FRESIDUAL V	VASTE							
	1. PROCESSING OR DISPOSAL FACILITY(IES)										
The ar	The area below (ad.) will accommodate the identification of two facilities. Attach additional sheets if necessary.										
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361										
b.	Facility Name	McKean County Landfill									
	Address Line 1	19 Ness Lane									
	Address Line 1										
	Address City State ZIP	Kane	PA M M	16735							
	Municipality	Kane	County McK	ean ——————							
C.	Facility Contact Name	Mike Manderfeld									
	Title	General Manager									
	Phone	814-778-9931 Ema	i il Address man	derfeld@gma	ail.com						
d.	369	rocessing or disposal facility ir cu yd gal lb	⊠ ton	(check one)							
a.		for processing or disposal faci	lity being utilized.			:					
b.	Facility Name										
	Address Line 1										
	Address Line 1										
	Address City State ZIP										
	Municipality		County								
C.	Facility Contact Name										
	Title	F	!I A -I -I								
	Phone		il Address								
d.	Volume of waste shipped to p	rocessing or disposal facility ir cu yd gal lb	· <u>—</u>	(check one)							
		2 BENEFICIAL U	JSE								
a.	Has the waste been approved	for beneficial use?			Yes	⊠ No					
		t number or approval number.									
b.	Volume of waste beneficially to	used in the previous year. cu yd ☐ gal ☐ Ib	ton	(check one)	-						

			SECTION D. CERTIFICATION
Reportair know	rt and all attached docu ning the information, I v ledge. I understand that	ments erify the s	ave personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check	the following, if applicat	le:	
	I certify the information and has not chan	-	red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not chan-		red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information if for the year and h		ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina I	Brown		
Signa	ture	2	Une Date 2/25/11

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053413

PAGE:

1 of 5

PO#:

PHONE: FAX:

(607) 731-0145 (607) 562-4001

TEST REPORT

PWS ID#

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 1 of 5

SAMPLE: Flowback Sand		Lab I	D: 10053413-001A	Compo	osite		
SAMPLED BY: SG	Sam	ple Tim	e: 05/24/2010 17:30				
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	505 mg/Kg-dry		EPA 6010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	4.60 mg/kg	N	HACH 8167	0.05	05/26/10 10:23	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Butanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter not NELAC certified
- Ammonia sample not distilled U

			5 (T (0 D 1 D	
MANAGER	Carrie M. Davis	DATE:	6/1/2010	

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053413

PAGE:

2 of 5

PO#:

PWS ID#

PHONE: (607) 731-0145

FAX:

(607) 731-0145

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2	DATE:	05/25/2010 8:54		and a first of the contract and a second of the contract of th	P	age 2 of 5
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrolein	< 2.11 mg/Kg-dry	EPA 8260B	2.11	05/27/10 20:05	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrylonitrile	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Acetone	< 0.422 mg/Kg-dry	EPA 8260B	0.422	05/27/10 20:05	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrahydrofuran	< 0.211 mg/Kg-dry	N EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- N Parameter not NELAC certifled
- U Ammonia sample not distilled

			Z/11/0010
MANAGER	ani M. Davis	DATE:	6/1/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

110156116805, 141 140-

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PAGE: 3 of 5

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ILOUIVED I OILERO DI. DEIVIE	D/\\\\	00/	20/2010 0.04				agosors
1,3-Dichloropropane	< 0.042 mg/Kg-dry	neminana primaria irri	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Hexanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Styrene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Cumene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Naphthalene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloride	619 mg/Kg-dry		EPA 300.0	52.8	05/26/10 15:48	05/27/10	HDP-CV
Formaldehyde	< 1.1 mg/Kg-dry	N	NIOSH 3500	1.1	05/27/10 7:30	05/27/10	LTW-CV
Percent Moisture	5.3 %	N	SM2540G		05/25/10 11:35	05/27/10	DMB-CV

SAMPLE: Flowback Sand

SAMPLED BY: SG

Lab ID: 10053413-001B Composite

Sample Time: 05/24/2010 17:30

SLOQ Result Method Test Analysis Start Analysis End Analyst * U < 11 mg/kg-dry Ammonia as N Lachat 11 05/27/10 12:00 05/27/10 JP-SA Free Liquid < 0.1 % EPA 9095A 0.1 05/25/10 11:55 05/25/10 IC-SA

REMARKS:

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MANAGER	Carri M. Davis	DATE:	6/1/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

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COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

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PAGE: 4 of 5

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DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2	DATE:	05/25/2010 8:54			Pa	age 4 of 5
pH	7.74@22.6°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA
SAMPLE: Flowback Sand	L	ab ID: 10053413-001C	Compo	osite		
SAMPLED BY: SG	Sample	Time: 05/24/2010 17:30	SLOQ			
Test	Result	Method		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Sample Note: Analysis performed	by Life Science					
SAMPLE: Flowback Sand	L	ab ID: 10053413-001D	Compo	osite		
SAMPLED BY: SG	Sample	Time: 05/24/2010 17:30	SLOQ			
<u>Test</u>	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	5.34 mg/Kg DRY	EPA 9065	1.35	05/27/10 8:45	05/27/10	
Sample Note: Analysis performed	by QC Laboratories.					
SAMPLE: Flowback Sand	La	ab ID: 10053413-001E	Compo	site		
SAMPLED BY: SG	Sample *	Time: 05/24/2010 17:30	61.00			
<u>Test</u>	Result	Method	SLQQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	4490 mg/Kg	EPA 9071		05/26/10 11:00	05/26/10	
Sample Note: Analysis performed	by Microbac- Erie					
SAMPLE: TCLP Leachate of Flowba	ck Sand La	ab ID: 10053413-001G	Compo	site		
SAMPLED BY: SG	Sample 1	Time: 05/26/2010 7:50				
Test	Result	Method	SLOQ	Anabiala Ptaut	A	A14 #
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	Analysis Start 05/26/10 13:30	Analysis End 05/27/10	
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 13:30		JRA-CV
	-					GSR-CV
Barium - TCLP extracted Cadmium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00	05/27/10	GSR-CV
	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter not NELAC certified Ν
- Ammonia sample not distilled

	\bigcap			
MANAGER	Carri M. Davis	DATE:	6/1/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053413

PAGE:

5 of 5

PO#:

PWS ID#

PHONE: FAX:

(607) 731-0145 (607) 562-4001 **TEST REPORT**

DCNR58702 Pad 4

DATE: (05/25/2010 8:54			P	age 5 of 5
< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
0.146 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV
	< 0.500 mg/L 0.146 mg/L < 0.500 mg/L < 0.100 mg/L < 0.500 mg/L < 0.100 mg/L	0.146 mg/L EPA 6010B < 0.500 mg/L EPA 6010B < 0.100 mg/L EPA 6010B < 0.500 mg/L EPA 6010B < 0.100 mg/L EPA 6010B	< 0.500 mg/L	< 0.500 mg/L	< 0.500 mg/L

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- Parameter not NELAC certified
- U Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	6/1/2010

CHAIN OF CUSTODY						_				PAGE1	OF1
REPORT TO: Talisman / UEG					25	661				P	
geowetlands@aol.com											DETECTION LIMITS
twollin@rallysolutions.ca	1		ATE SA		S		W/O#: 10053413		FOR:	NEEDED: YE IF YES, PLEASI	
	<u> </u>	.1(00)	LLLVII	ION		/DW GW	DRINKING WATER SL SLUDGE	ÆC	PADEP	IS A QC	PACKAGE NEEDED?
CONTACT Steve Gridley	7	RANS	PORT			/ sw	SURFACE WATER HZ HAZARDOUS LAND	FILL			YES NO
PH# 607-731-0145		TO				DE	DEKONIZED WATER DI DISTILLED WATER DERSONAL OTHE	.R		IF YES, PLEAS	E ATTACH REQUIREMENTS
FAX#		ABOR IN CO	ATORY			18	H HYDROCHLORIC ACID OH SODIUM HYDROXIDE S SULFURIC ACID AS ASCORBIC ACID			/ / [5]	/
BILL TO: Talisman		WITH		_/	/ /		N NITRIC ACID SO SODIUM SULFITE Thio SODIUM THIOSULFATE ZN ZINC ACETATE	٤		[] [] [] [] [] [] [] [] [] []	
PO# COMPLETIONS			/ 5	, /		<u>ه</u> / څ	- NONE Hg MERCURIC CHLORIDE		/ jū		
PROJECT DESCRIPTION DCDRS 8 00 Pod 4 SAMPLER SIGNATURE / AFFILIATION	/	Thur Shiples	SAMPLING SAMPLING	SALLE		PRESCHIMITALS COMPOSITE	An incomplete chain of custody may delay the processing of your sample(s). ANALYSIS TO BE PERFORMED (PER CONTAINER)	/	Prese	LAREN SECTION ASSESSED ASSESSED SECTION ASSESSED A	Please fill out all applicable areas completely
CONTAINER SAMPLING POINT	TES S	Sy / 3/1/2		7 80			ANALYSIS TO BE PERFORMED (PER CONTAINER)	8		LAB	
1 Flowback Sand	5/24	1730	50	C	56-	N	TPH, pH, Free Liquids, % Moisture				-OOIA-B
2							Chlorides, Sodium, Bromine				
3							TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se				
4 A-Na, CI, Bromine, Alcoh	ol,	PM	ist	82	60		Ag, Cu, Zn, Ni				
5 V Formal dehyde							Alcohols, Glycols, Formaldehyde				
6 B pH, Free Liquid, Phos,	NH.	B					EPA 8260				
7 C- Giycoi						<u> </u>	Total Phosphorus, Total Phenolics	-346			
8 D. Phenol				<u> </u>	<u> </u>	<u> </u>	Ammonia - Nitrogen				
9 E - TPH	<u> </u>			<u> </u>			1				
10 F. T. Sample		<u> </u>					48 HOUR TURNAROUND				
11 G TOLP MOTALO+CUN,	12n	<u> </u>	<u> </u>	<u> </u>		<u></u>	DAY TURNAROUND	1030			
DELIVERED BY			36				TEMPERATURE UPON RECEIR			°C AR	RIVAL ON ICE YAN
RELINIOUSHED BY:	*		DATE:		U	TIME 8	RECEIVED BY:	<u> </u>		DATE:	TIME:
RELINQUISHED BY:			DATE:	1		TIME:	RECEIVED BY:			DATE: /	/ TIME:
RELINQUISHED BY:		1	DATE:	1		TIME:	RECEIVED BY: () Lbb; o MCC +			DATE:	TIME



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed or leg each attach	ibly printed in the spac ned sheet as Form 26F	rately completed. All requi es provided. If additional sp R, reference the item numb eets needs to match the date	ace is necessary, ider er and identify the o	ntify Date Receive	USE≝ONLY ed & General Notes
General Ref	erence 287.54				
Date Prepar	ed/Revised F	February 11, 2011			
4.5	SECTION A	. CLIENT (GENERATOR	OF THE WASTE)	NFORMATION	
Company N					
	nergy USA Inc.			- EDA	C
Talisman E	ary, Name of Parent Cor	npany		N/A	Generator ID#
	ailing Address Line 1	C	ompany Mailing Addre		
50 Pennwo		-	,		
	ddress Last Line – City	State	Zip+4	Phone .	Ext
Warrendale		PA	15086	(724) 814-530	
	ontact Last Name	First Name	MI	Suffi	x
Brown Municipality		Dina	County		
Warrendale			Allegheny		
Contact Pho		Contact Email Address			
(724) 814-5		dybrown@talismanusa.c			
		any Mailing Address (noted a			Yes 🛛 No
If 'No', desc	ribe location of waste g	eneration and storage. Wast	e is generated during n	atural gas completion	operations at the
onsite.	2-004 well pad site locate	ed at 1247 Fallbrook Road, Wa	rd Township, Tioga Cou	ınty, PA. The waste i	s temporarily stored
onsite.					
Municipality	v Ward	County Tioga		State	PA
Municipality	Ward		E DESCRIPTION		PA
Municipality Residual			E DESCRIPTION		PA Time
	Resi	SECTION B. WAST	E DESCRIPTION Amount	Unit of Measure	
Residual	Resi	SECTION B. WAST idual Waste Description		Unit of Measure ☐ cu yd ☐ gal	Time Frame
Residual Waste Code	Resi Code	SECTION B. WAST idual Waste Description (Flow Back Sand)	Amount 153	Unit of Measure	Time
Residual Waste Code 804	Resi Code Fracing Fluid Waste	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P	Amount 153	Unit of Measure □ cu yd □ gal □ lb ☑ ton	Time Frame
Residual Waste Code 804	Resi Code Fracing Fluid Waste	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P	Amount 153 ROPERTIES (based on analyses or	Unit of Measure □ cu yd □ gal □ lb ☑ ton	Time Frame
Residual Waste Code 804	Resi Code Fracing Fluid Waste	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909)	Amount 153 ROPERTIES (based on analyses or thod 9095) 95)	Unit of Measure □ cu yd □ gal □ lb ☑ ton	Time Frame
Residual Waste Code 804 a. pH F b. Phys	Resi Code Fracing Fluid Waste Range 7	SECTION B. WAST idual Waste Description e (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure)	Unit of Measure cu yd gal lb dton knowledge)	Time Frame
Residual Waste Code 804 a. pH F b. Phys	Resi Code Fracing Fluid Waste	SECTION B. WAST idual Waste Description e (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera Color Greyish Black	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Od	Unit of Measure cu yd gal lb ton knowledge) or Hydrocarbon	Time Frame
Residual Waste Code 804 a. pH F b. Phys	Resi Code Fracing Fluid Waste Range 7	SECTION B. WAST idual Waste Description e (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera Color Greyish Black Number of Solid or Liquid	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation	Unit of Measure cu yd gal lb ton knowledge) or Hydrocarbon	Time Frame
Residual Waste Code 804 a. pH F b. Phys	Resi Code Fracing Fluid Waste Range 7	SECTION B. WAST idual Waste Description e (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera Color Greyish Black	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation	Unit of Measure cu yd gal lb ton knowledge) or Hydrocarbon	Time Frame
Residual Waste Code 804 a. pH F b. Phys	Resi Code Fracing Fluid Waste Range 7	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	Unit of Measure cu yd gal lb ton knowledge) or Hydrocarbon	Time Frame
Residual Waste Code 804 a. pH F b. Phys	Resi Code Fracing Fluid Waste Range 7 sical State Sical Appearance	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid Describe each phase of Solid CHAMALYS	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	Unit of Measure cu yd gal lb ton knowledge) or Hydrocarbon n One	Time Frame One Time
Residual Waste Code 804 a. pH F b. Phys	Resing Fluid Waster Range 7 Sical State Sical Appearance results of a detailed checker.	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid Describe each phase of semical characterization of the	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described	Unit of Measure cu yd gal bloom ton knowledge) or Hydrocarbon n One	Time Frame One Time Yes No
Residual Waste Code 804 a. pH F b. Phys c. Phys a. The instr b. A de	Resing Fluid Waster Range 7 Sical State results of a detailed checutions, is attached. tailed description of the	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated Color Greyish Black Number of Solid or Liquid Describe each phase of semical characterization of the ewaste sampling method is a	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described intached.	Unit of Measure cu yd gal lb ton knowledge) or Hydrocarbon n One	Time Frame One Time Yes No No
Residual Waste Code 804 a. pH F b. Phys c. Phys a. The instr b. A de c. The	Resing Fluid Waster Range 7 Sical State results of a detailed checutions, is attached. tailed description of the quality assurance/quality	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid Describe each phase of semical characterization of the	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described intached.	Unit of Measure cu yd gal lb ton knowledge) or Hydrocarbon n One	Time Frame One Time Yes No
Residual Waste Code 804 a. pH F b. Phys c. Phys a. The instr b. A de c. The attace	Resing Code Fracing Fluid Waste Range 7 Sical State results of a detailed checuctions, is attached. tailed description of the quality assurance/quality ched.	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated Color Greyish Black Number of Solid or Liquid Describe each phase of semical characterization of the ewaste sampling method is a	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(Unit of Measure cu yd gal bloom knowledge) or Hydrocarbon One in the	Time Frame One Time Yes No Yes No Yes No
Residual Waste Code 804 a. pH F b. Phys c. Phys b. A de c. The attac d. The e. If ap	Resing Fluid Waster Range 7 Sical State results of a detailed checuctions, is attached. tailed description of the quality assurance/quality ched. results of the hazardous	SECTION B. WAST idual Waste Description (Flow Back Sand) 1. GENERAL P 7.74 to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS emical characterization of the e waste sampling method is a ty control procedures employ s waste determination is attack anation supporting use of ge	Amount 153 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(ched.	Unit of Measure cu yd gal bloom knowledge) The Hydrocarbon One In the Sies) is Sies	Time Frame One Time Yes No No

2540-PM-BWM0347 Rev. 1/2011

V20355.00		PROCESS DESCRIPTION & SCH				Sagarage Aces
a.	A detailed description of the the waste, as specified in the	manufacturing and/or pollution instructions, is attached.	control proces	ses producing	⊠ Yes	☐ No
b.	A schematic of the manufacture as specified in the instruction	uring and/or pollution control p is, is attached.	rocesses produ	ucing the waste,	⊠ Yes	☐ No
c.		submitted are confidential, the cribed in the instructions, is a		for Yes	☐ No	⊠ N/A
	SECTION	ONIC. MANAGEMENT O	OF RESIDUA	AL WASTE		
		1: PROCESSING OR DISPOS	acattantinatintinatinatinatinatinatinatina			
The ar	ea below (ad.) will accommod				if necessar	y.
a.	Solid waste permit number(s) 100361	for processing or disposal fac	ility being utiliz	ed.		
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane				
	Address Line 1					
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County	McKean		
c.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931 Em	a: A alalua a a		ail aam	
	1 110116	014-770-9931 Em	ail Address	manderfeld@gm	all.Com	
d.	Volume of waste shipped to p	rocessing or disposal facility i cu yd gal ll	n the previous y	year. (check one)		
d. a.	Volume of waste shipped to p 153 Solid waste permit number(s)	rocessing or disposal facility i	n the previous y	year. (check one)		
	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name	rocessing or disposal facility i cu yd gal ll	n the previous y	year. (check one)		
a.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1	rocessing or disposal facility i cu yd gal ll	n the previous y	year. (check one)		
a.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	rocessing or disposal facility i cu yd gal ll	n the previous y	year. (check one)		
a.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address City State ZIP	rocessing or disposal facility i cu yd gal ll	n the previous y illity being utiliz	year. (check one)		
a.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	rocessing or disposal facility i cu yd gal ll	n the previous y	year. (check one)		
a.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal facility i cu yd gal ll	n the previous y illity being utiliz	year. (check one)		
a. b.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal facility i cu yd	n the previous you ton the previous you ton the illity being utilized.	year. (check one)		
a. b.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal facility i cu yd	n the previous y illity being utiliz	year. (check one)		
a. b.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal facility i cu yd	ton illity being utiliz County ail Address the previous y	year. (check one)		
a. b.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal facility i cu yd	county County Address the previous y ton	year. (check one)		
a. b.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal facility i cu yd	county County Address the previous y ton	year. (check one)		No
a. b.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p Has the waste been approved If "Yes", list the general perm	rocessing or disposal facility i cu yd	county County Address the previous y ton County ton ton USE	year. (check one)		No
a. b.	Volume of waste shipped to p 153 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal facility i cu yd	county County Address the previous y ton county county ton ton ton ton ton	year. (check one)		No

	, and a	SECTION D. CERTIFICATION
Report and all attached docu obtaining the information, I knowledge. I understand that	ments verify the s	nave personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check the following, if applical	ole:	
I certify the information and has not chan	-	ired in Section B-1, General Properties was supplied to the Department for the year
Form Submitted:		Form 26R
		Other (specify)
Date Submitted:		
I certify the information and has not chan	•	red in Section B-2, Chemical Analysis was supplied to the Department for the year
Form Submitted:		Form 26R
		Other (specify)
Date Submitted:		
I certify the information for the year and h	-	ed in Section B-3, Process Description and Schematic, was supplied to the Department t changed.
Form Submitted:		Form 26R
		Other (specify)
Date Submitted:		
Name of Responsible Official		Title Environmental Specialist
Dina Brown		a
Signature		Mm Date 2(25/11
		·

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

(607) 731-0145

WO#: 10053413

PAGE: 1 of 5

PO#:

PWS ID#

FAX: (607) 562-4001 DCNR58702 Pad 4

PHONE:

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

TEST REPORT

Page 1 of 5

SAMPLE: Flowback Sand		Lab	D: 10053413-001A	Compo	osite		
SAMPLED BY: SG	Sam	iple Tim	ne: 05/24/2010 17:30				
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	505 mg/Kg-dry		EPA 6010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	4.60 mg/kg	N	HACH 8167	0.05	05/26/10 10:23	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Butanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- N Parameter not NELAC certified
- U Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	6/1/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

10053413

2 of 5

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PO#:

WO#:

PAGE:

PWS ID#

PHONE: FAX:

(607) 731-0145 (607) 562-4001

DCNR58702 Pad 4

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TEST REPORT

		كالمان والمساور				
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-ÇV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrolein	< 2.11 mg/Kg-dry	EPA 8260B	2.11	05/27/10 20:05	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrylonitrile	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Acetone	< 0.422 mg/Kg-dry	EPA 8260B	0.422	05/27/10 20:05	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrahydrofuran	< 0.211 mg/Kg-dry	N EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; ŠA = Benchmark Analytics, Inc. Sayre, PA
- Parameter not NELAC certifled
- U Ammonia sample not distilled

	/1				
MANAGER	anni	M. Davis	DATE:	6/1/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053413

PAGE:

3 of 5

PO#:

PWS ID#

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

DCNR58702 Pad 4

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DATE: 05/25/2010 8:54

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RECEIVED FOR LAB BY: DLM2	DATI	z: U5/	25/2010 8:54			J	age 3 of 5
1,3-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Hexanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Styrene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Cumene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Naphthalene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloride	619 mg/Kg-dry		EPA 300.0	52.8	05/26/10 15:48	05/27/10	HDP-CV
Formaldehyde	< 1.1 mg/Kg-dry	N	NIOSH 3500	1.1	05/27/10 7:30	05/27/10	LTW-CV
Percent Moisture	5.3 %	N	SM2540G		05/25/10 11:35	05/27/10	DMB-CV

SAMPLE: Flowback Sand

SAMPLED BY: SG

Lab ID: 10053413-001B

Composite

Sample Time: 05/24/2010 17:30

				SLOQ			
Test	Result		<u>Method</u>		Analysis Start	Analysis End	Analyst *
Ammonia as N	< 11 mg/kg-dry	U	Lachat	11	05/27/10 12:00	05/27/10	JP-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	05/25/10 11:55	05/25/10	IC-SA

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter not NELAC certified Ν
- Ammonia sample not distilled U

MANAGED		h. Dentis	DATE:	6/1/2010	
MANAGER	Carri	M. Oavis	DATE	0/1/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053413

PAGE:

4 of 5

PO#:

PWS ID#

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2	DATE	E: 05/25/2010 8:54			Pa	age 4 of 5
pH	7.74@22.6°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA
SAMPLE: Flowback Sand		Lab ID: 10053413-001C	Compo	osite		
SAMPLED BY: SG	Sam	ple Time: 05/24/2010 17:30				
Tool	Desvit	Method	SLOQ	Analysis Start	Anahala End	A nelvot 1
Test	<u>Result</u> < 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	Analysis End 05/27/10	Analyst *
Ethylene glycol Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Sample Note: Analysis performed l		Glycois	1.00	03/20/10 0:00	03/21/10	
Gample Note. Alialysis perioritied	Jy Life Ocience	······································				
SAMPLE: Flowback Sand		Lab ID: 10053413-001D	Compo	site		
SAMPLED BY: SG	Sam	ple Time: 05/24/2010 17:30				
Total	Desuit	h d a d b a a d	<u>SLOQ</u>	A 1 1 04 4	American en la	
<u>Test</u> Phenolics, Total Recoverable	Result	<u>Method</u> EPA 9065	4.06	Analysis Start	Analysis End	Analyst *
Sample Note: Analysis performed b	5.34 mg/Kg DRY	EPA 9005	1.35	05/27/10 8:45	05/27/10	
- Cample Note: Analysis penorined i	y QC Laboratories.	A 1. 10. 14 14 14 14 14 14 14 14 14 14 14 14 14			***	
AMPLE: Flowback Sand		Lab ID: 10053413-001E	Compo	site		
SAMPLED BY: SG	Sam	ple Time: 05/24/2010 17:30				
Test	Result	Madhad	SLOQ	Ammiriate Otani	Amelia Cad	A 1 1 *
Total Petroleum Hydrocarbons	4490 mg/Kg	Method		Analysis Start	Analysis End	Analyst *
Sample Note: Analysis performed t		EPA 9071		05/26/10 11:00	05/26/10	
AMPLE: TCLP Leachate of Flowbac		Lab ID: 10053413-001G	Compo	nita		
SAMPLED BY: SG			Compo	Sile		
SAMPLED BY: SG	Samp	ple Time: 05/26/2010 7:50	SLOQ			
Test	<u>Result</u>	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/26/10 13:30	05/27/10	JRA-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00	05/27/10	GSR-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

EPA 6010B

0.100 05/26/10 14:00

05/27/10 GSR-CV

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

< 0.100 mg/L

Parameter not NELAC certified

Cadmium - TCLP extracted

U Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	6/1/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169 Fax: (570) 888-0717

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NAME: Steve Gridley WO#:

10053413

COMPANY: Talisman Energy USA, Inc.

PAGE:

5 of 5

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Horseheads, NY 14845

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TEST REPORT

PWS ID#

DCNR58702 Pad 4

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DATE: 05/25/2010 8:54

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7110-17-10-10-10-10-10-10-10-10-10-10-10-10-10-					250 5 01 5	
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Copper - TCLP extracted	0.146 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV

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- Parameter not NELAC certified
- Ammonia sample not distilled

	\cap			
MANAGER	Carrie M. Davis	DATE:	6/1/2010	

CHAIN OF CUSTODY PAGE 1 OF 1 REPORT TO: Talisman / UEG 2561 ARE SPECIAL DETECTION LIMITS geowetlands@aol.com W/O#: 10053413 NEEDED: YES / NO twollin@rallvsolutions.ca REFRIGERATE SAMPLES FOR: IF YES, PLEASE ATTACH AFTER COLLECTION NYDEC ИУрон DRINKING WATER SLUDGE IS A QC PACKAGE NEEDED? **GROUND WATER** SO SOIL CONTACT Steve Gridley HZ SURFACE WATER **HAZARDOUS** LANDFILL YES NO TRANSPORT WASTE WATER OTHER DISTILLED WATER PERSONAL OTHER DEIONIZED WATER DI 607-731-0145 TO IF YES, PLEASE ATTACH REQUIREMENTS SAMPLE TIPE, GOAB/COMPOSITE | **LABORATORY** HYDROCHLORIC ACID OH SODIUM HYDROXIDE FAX# IN COOLER SULFURIC ACID ASCORBIC ACID BILL TO: Talisman NITRIC ACID ACETIC ACID AC WITH ICE COMPOSITED ON PECETORY SODIUM SULFITE NH, AMMONIUM CHLORIDE SODIUM THIOSULFATE ZN ZING ACETATE PO# COMPLETIONS SAMPLER MITALS MERCURIC CHLORIDE SAMPLEMATRIX Please fill out all An incomplete chain of custody may delay the applicable areas processing of your sample(s). completely UEC ONTAINER SAMPLING POINT **ANALYSIS TO BE PERFORMED** LAB USE ONLY (PER CONTAINER) 1/24/77050 56--001A-6 Flowback Sand TPH, pH, Free Liquids, % Moisture Chlorides, Sodium, Bromine TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se A-Na, CI, Bromine, Alcohol, PAdist 8260 Ag, Cu, Zn, Ni Alcohols, Glycols, Formaldehyde Formal dehyde pH, Free Liquid, Phos, NHB **EPA 8260** Total Phosphorus, Total Phenolics C- Glycol n. Phenol Ammonia - Nitrogen E. TPH HOUR TURNAROUND F. T. Sample DAY TURNAROUND GTCLP NOTALO+CUNI TEMPERATURE UPON RECEIPT C ARRIVALIONIGE YAN DELIVERED BY Due 5127110 RELINATISHED BY: DATE: 25 11 0 TIME: 85 4 RECEIVED BY: DATE: TIME: TIME: RECEIVED BY: DATE: TIME: RELINQUISHED BY: RECEIVED BY: Debbum Canty RELINQUISHED BY: TIME: DATE:



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.						
Genera	al Refe	rence 287.54				
Date P	repare	d/Revised Fel	bruary 11, 2011			
		SECTION A.	CLIENT (GENERATOR	ROFTHE WASTE) I	NFORMATION	
	any Nar					
		ergy USA Inc.				
		y, Name of Parent Comp	pany			Generator ID#
		ergy Inc. iling Address Line 1	C	ompany Mailing Addr	N/A	
		d Place	·	ompany maning Addit	335 Enic 2	
		dress Last Line – City	State	Zip+4	Phone	Ext
Warre			PA	15086	(724) 814-53	
-	-	ntact Last Name	First Name	MI	Suffi	ix
Brown			Dina	3		
Munici Warre				County Allegheny		
	ct Phon	ie Ext	Contact Email Address	Allegricity		
	814-53		dybrown@talismanusa.d	com		
			ny Mailing Address (noted			Yes 🛛 No
			neration and storage. Wast			
		-009 well pad site located	at 2499 River Road, Ward T	ownship, Tioga County	PA. The waste is te	mporarily stored
onsite.						
Munici	ipality	Ward	County Tioga		State	PA
	50000		SECTION B. WAST	E DESCRIPTION		
Resid	dual	Resid	ual Waste		Unit of	т,
Waste	Code		uai wasie	1	OTHE OF	Time
804		Code L	Description	Amount	Measure	Frame
JUT		Fracing Fluid Waste (Description	Amount 624	Measure ☐ cu yd ☐ gal	Frame
304			Pescription Flow Back Sand)	624	Measure	
a.	pH Ra	Fracing Fluid Waste (Description Flow Back Sand) 1. GENERAL P	624	Measure □ cu yd □ gal □ lb □ ton	Frame
		Fracing Fluid Waste (Description Flow Back Sand) 1. GENERAL P	624 ROPERTIES (based on analyses or	Measure □ cu yd □ gal □ lb □ ton	Frame
a		Fracing Fluid Waste (Pescription Flow Back Sand) 1. GENERAL P 1 to Liquid Waste (EPA Me Solid (EPA Method 90	624 PROPERTIES (based on analyses or ethod 9095) 95)	Measure □ cu yd □ gal □ lb □ ton	Frame
a	Physic	Fracing Fluid Waste (nge 7.2 cal State	Flow Back Sand) 1. GENERAL P 1 to Liquid Waste (EPA Method 90 Gas (ambient tempera	624 ROPERTIES (based on analyses or ethod 9095) 95) ture & pressure)	Measure □ cu yd □ gal □ lb ☑ ton knowledge)	Frame
a	Physic	Fracing Fluid Waste (Flow Back Sand) 1. GENERAL P 1. To Liquid Waste (EPA Method 90 Solid (EPA Method 90 Gas (ambient tempera	624 ROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Od	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon	Frame
a. b.	Physic	Fracing Fluid Waste (nge 7.2 cal State	Plow Back Sand) 1. GENERAL P 1. GENERAL P 1. GENERAL P 1. GENERAL P 21 to Liquid Waste (EPA Method 90) Gas (ambient temperated of Solid or Liquid Number of Solid or Liquid	624 PROPERTIES (based on analyses or bthod 9095) 95) ture & pressure) Odd Phases of Separatio	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon	Frame
a. b.	Physic	Fracing Fluid Waste (nge 7.2 cal State	Flow Back Sand) 1. GENERAL P 1. To Liquid Waste (EPA Method 90 Solid (EPA Method 90 Gas (ambient tempera	624 PROPERTIES (based on analyses or bthod 9095) 95) ture & pressure) Odd Phases of Separatio	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon	Frame
a. b.	Physic	Fracing Fluid Waste (nge 7.2 cal State	The secription Flow Back Sand) 1. GENERAL P 1. GENERAL P 1. GENERAL P 1. GENERAL P 21 to 1. Liquid Waste (EPA Me 2. Solid (EPA Method 90 2. Gas (ambient tempera 2. Color Greyish Black 3. Number of Solid or Liquid 4. Describe each phase of s	624 PROPERTIES (based on analyses or sthod 9095) 95) ture & pressure) Odd Phases of Separatio eparation. Sand	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon	Frame
a. b.	Physic Physic	Fracing Fluid Waste (nge 7.2 cal State cal Appearance	Plow Back Sand) 1. GENERAL P 1. GENERAL P 1. GENERAL P 1. GENERAL P 21 to Liquid Waste (EPA Method 90) Gas (ambient temperated of Solid or Liquid Number of Solid or Liquid	624 PROPERTIES (based on analyses or sthod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	Measure □ cu yd □ gal □ lb □ ton knowledge) or □ Hydrocarbon on □ One	Frame One Time
a. b. c.	Physic Physic The re	Fracing Fluid Waste (nge 7.2 cal State cal Appearance esults of a detailed chemictions, is attached.	The second of th	624 PROPERTIES (based on analyses or sthod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS a waste, as described	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon on One in the □	Yes No
a. b.	Physical Phy	racing Fluid Waste (nge 7.2 cal State cal Appearance esults of a detailed chemotions, is attached. iiled description of the v	The state of the s	624 PROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon n One in the □	Yes No
a. b. c.	Physical Phy	racing Fluid Waste (nge 7.2 cal State cal Appearance esults of a detailed chemictions, is attached. ailed description of the vality assurance/quality	The second of th	624 PROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon n One in the □	Yes No
a. b.	Physical Phy	racing Fluid Waste (nge 7.2 cal State cal Appearance esults of a detailed chemictions, is attached. iiled description of the vality assurance/quality ed.	The state of the s	624 PROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon n One in the □	Yes No
a. b. c.	Physical Phy	racing Fluid Waste (nge 7.2 cal State cal Appearance esults of a detailed chemotions, is attached. iiled description of the volulity assurance/quality ed. esults of the hazardous volusity of the hazardous volusity.	Pescription Flow Back Sand) 1. GENERAL P 1. GENERAL P 1. GENERAL P 1. GENERAL P 2. Liquid Waste (EPA Me Solid (EPA Method 90 Gas (ambient temperal Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALY nical characterization of the control procedures employed waste determination is attaination supporting use of get	ROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(ched.	Measure □ cu yd □ gal □ lb □ ton knowledge) or Hydrocarbon □ One in the □	Yes No Yes No Yes No

3. Process Description & Schematic Attachments								
a.	A detailed description of the r the waste, as specified in the		ition control proc	esses producing	Yes No			
b.	A schematic of the manufacture as specified in the instruction		rol processes pro	ducing the waste,	Yes No			
C.	If portions of the information a confidentiality claim, as des			on for Yes	□ No ☑ N/A			
	SECTION	N.C. MANAGEMEN	IT OF RESIDU	JAL WASTE				
		1. PROCESSING OR DIS		CAN MAKE MAKE MENTAL PROPERTY OF THE PROPERTY				
The ar	ea below (ad.) will accommod					2,000		
a.	Solid waste permit number(s) 100361	for processing or disposa	l facility being uti	lized.				
b.	Facility Name	McKean County Landfill						
	Address Line 1	19 Ness Lane						
	Address Line 1							
	Address City State ZIP	Kane	PA	16735				
	Municipality	Kane	County	McKean				
c.	Facility Contact Name	Mike Manderfeld						
	Title	General Manager						
	Phone	814-778-9931	Email Address	manderfeld@gm	ail.com			
d.	Volume of waste shipped to processing or disposal facility in the previous year. 624 □ cu yd □ gal □ lb ☑ ton (check one)							
a. Solid waste permit number(s) for processing or disposal facility being utilized.								
b.	Facility Name							
	Address Line 1							
	Address Line 1							
	Address City State ZIP							
	Municipality	County						
c.	Facility Contact Name							
	Title							
	Phone Email Address							
d.	Volume of waste shipped to p			=				
		cu yd gal] lb to	n (check one)				
		2. Benefic	TAL USE					
a.	Has the waste been approved	for beneficial use?			☐ Yes ☒ No			
	If "Yes", list the general permit number or approval number.							
b.	Volume of waste beneficially used in the previous year.							
	0 📙	cu yd 🔲 gal 📋	」lb ∐toi	n (check one)	i			

SECTION D. CERTIFICATION							
I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.							
Check the following, if applicable:							
I certify the information required in Section B-1, General Properties was supplied to the Department for the year and has not changed.							
Form Submitted:		Form 26R					
		Other (specify)					
Date Submitted:							
I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year and has not changed.							
Form Submitted:		Form 26R					
		Other (specify)					
Date Submitted:							
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year and has not changed.							
Form Submitted:		Form 26R					
		Other (specify)					
Date Submitted:							
Name of Responsible Official		Title Environmental Specialist					
Dina Brown							
Signature Date 2/25/11							

LAB ID: 08-00380 LAB ID: 39-00401

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

ADDRESS:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10090958

PAGE: 1 of 4

PO#: Completions

PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

DCNR58702 Pad 9

RECEIVED FOR LAB BY: DLM2 DATE: 09/07/2010 16:25 Page 1 of 4

TEST REPORT

SAMPLE: Flowback Sand		Lab II	D: 10090958-001A	Compo	site		
SAMPLED BY: SG	San	nple Tim	e: 09/07/2010 14:15	01.00			
<u>Test</u>	Result		Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Ethanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isopropanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
t-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Propanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isobutanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Sodium	969 mg/Kg-dry		EPA 6010B	126	09/09/10 7:20	09/09/10	RMD-CV
Bromine	20.7 mg/kg	Ν	HACH 8167	0.05	09/08/10 15:23	09/08/10	SMH-CV
1,1-Dichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Methylene chloride	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
2-Butanone	< 2.03 mg/Kg-dry		EPA 8260B	2.03	09/08/10 9:50	09/08/10	MTB-CV
trans-1,2-Dichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1-Dichloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
cis-1,2-Dichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Chloroform	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1,1-Trichloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Carbon tetrachloride	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Benzene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Trichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloropropane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Dibromomethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; ŠA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

	<u></u>		
MANAGER	Churi M. Navis	DATE:	9/13/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10090958

COMPANY: Talisman Energy USA, Inc.
ADDRESS: 337 Daniel Zenker Dr PAGE: 2 of 4

Horseheads, NY 14845 PO#: Completions

TEST REPORT PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

DCNR58702 Pad 9

CEIVED FOR LAB BY: DLM2	DATE	: 09/	07/2010 16:25			P	age 2 of 4
Bromodichloromethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
cis-1,3-Dichloropropene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Toluene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10 -	MTB-CV
4-Methyl-2-pentanone (MIBK)	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
trans-1,3-Dichloropropene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1,2-Trichloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Tetrachloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Dibromochloromethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dibromoethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Chlorobenzene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1,1,2-Tetrachloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Ethylbenzene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
m,p-Xylene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
o-Xylene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Xylenes, Total	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Bromoform	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/10/10 13:26	09/10/10	MTB-CV
1,1,2,2-Tetrachloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2,3-Trichloropropane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,3-Dichlorobenzene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,4-Dichlorobenzene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichlorobenzene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Chloride	1690 mg/Kg-dry		EPA 300.0	50.9	09/08/10 15:54	09/09/10	HDP-CV
Formaldehyde	1.3 mg/Kg-dry	N	NIOSH 3500	1.0	09/10/10 8:10	09/10/10	LTW-CV
Percent Moisture	1.7 %		SM2540G		09/09/10 12:30	09/10/10	SG-SA

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	9/13/2010
	-70000		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10090958

PAGE:

3 of 4

PO#:

Completions

PWS ID#

PHONE: (607) 562-4000 FAX: (607) 562-4001

DCNR58702 Pad 9

TEST REPORT

RECEIVED FOR LAB BY: DLM2	DATE:	09/07/2010 16:25	· · · · · · · · · · · · · · · · · · ·		Pa	age 3 of 4			
SAMPLE: Flowback Sand		Lab ID: 10090958-001B Sample Time: 09/07/2010 14:15			Composite				
SAMPLED BY: SG	Samp								
<u>Test</u>	Result	<u>Method</u>	SLOQ	Analysis Start	Analysis End	Analyst *			
Moisture	1.70 %	Moisture Calc.	0.01	09/09/10 12:30	09/10/10	SG-SA			
Ammonia as N	31.7 mg/kg-dry	U Lachat	10.2	09/09/10 11:31	09/09/10	KAL-SA			
Free Liquid	< 0.1 %	EPA 9095A	0.1	09/07/10 17:10	09/07/10	IC-SA			
рН	7.21@19.7°C	EPA 9045C		09/10/10 10:00	09/10/10	SG-SA			
Phosphorus	48 mg/kg-dry	EPA 365.3	5	09/09/10 10:30	09/10/10	MED-SA			
SAMPLE: Flowback Sand		Lab ID: 10090958-001C	Compo	site					
SAMPLED BY: SG	Samp	Sample Time: 09/07/2010 14:15			81.00				
Test	Result	Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *			
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/10/10 0:00	09/10/10	Allaiyst			
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/10/10 0:00	09/10/10				
Sample Note: Analysis performe	0 0	, ,			20. 10. 12				
SAMPLE: Flowback Sand		Lab ID: 10090958-001D	Compo	site					
SAMPLED BY: SG	Samp	le Time: 09/07/2010 14:15	•						
- .	5 "		<u>SLOQ</u>						
<u>Test</u>	Result	Method	4.00	Analysis Start	Analysis End	Analyst *			
Phenolics, Total Recoverable	6.12 mg/Kg DRY	EPA 9065	1.29	09/09/10 7:15	09/09/10				
Sample Note: Analysis performe	d by QC Laboratories.								
SAMPLE: Flowback Sand		Lab ID: 10090958-001E	Compo	site					
SAMPLED BY: SG	Samp	le Time: 09/07/2010 14:15							
Toot	Result	Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *			
<u>Test</u>	Resuit	Metriod		MILITARY STATE	Analysis End	Allalyst			

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

EPA 9071

CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

6500 mg/Kg

- Value above calibration range but within annually verified linear range
- Parameter is not NELAC certified Ν

Total Petroleum Hydrocarbons

- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- Ammonia sample not distilled

Carrie M. Davis **MANAGER**

DATE:

09/08/10 14:30

9/13/2010

09/08/10

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

ADDRESS:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10090958

PAGE: 4 of 4

PO#: Completions

PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

DCNR58702 Pad 9

RECEIVED FOR LAB BY: DLM2 DATE: 09/07/2010 16:25 Page 4 of 4

TEST REPORT

Sample Note: Analysis performed by Microbac Laboratories, Inc.-Erie Division Lab ID: 10090958-001G Composite SAMPLE: TCLP Leachate of Flowback Sand SAMPLED BY: SG Sample Time: 09/08/2010 10:00 SLOQ Test Result Method **Analysis Start** Analysis End Analyst * Mercury - TCLP extracted < 0.0008 mg/L **EPA 7470A** 8000.0 09/09/10 10:00 09/09/10 KW-CV Arsenic - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 12:45 09/09/10 RMD-CV 09/09/10 12:45 Barium - TCLP extracted 43.7 mg/L **EPA 6010B** 10.00 09/09/10 RMD-CV Cadmium - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV 09/09/10 12:45 Chromium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 RMD-CV Copper - TCLP extracted 0.313 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV Lead - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 12:45 09/09/10 RMD-CV Nickel - TCLP extracted < 0.100 mg/L**EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV Selenium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 12:45 09/09/10 RMD-CV Silver - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV Zinc - TCLP extracted 0.476 mg/L 0.200 09/09/10 12:45 **EPA 6010B** 09/09/10 RMD-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

	// > .		
MANAGER	Carri M. Davis	DATE:	9/13/2010



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

This form must be fully and accurately completed. All typed or legibly printed in the spaces provided. If addition each attached sheet as Form 26R, reference the item r prepared. The date on attached sheets needs to match the				ace is necessary, iden er and identify the o	ntify 🗀	DEP Date Receive		
Genera	al Refer	ence 287.54						
Date P	repared	d/ Revised Fe	bruary 11, 2011					
		SECTION A.	CLIENT (GENERATOR	OF THE WASTE) II	NFOR	MATION		
Compa								
		ergy USA Inc.						
	-	y, Name of Parent Com	pany				Gene	rator ID#
		ergy Inc. ling Address Line 1		amaany Mailing Addre	oo Line	N/A		
•	•	Place	C	ompany Mailing Addre	555 LIFTE	;		
		dress Last Line – City	State	Zip+4	Р	hone	_	Ext
Warre		nood Last mine only	PA	15086		724) 814-530	00	
		ntact Last Name	First Name	MI		Suffi		
Brown			Dina					
Munici				County				
Warre				Allegheny				
Contac			Contact Email Address					
(724) 8	314-53	21	dybrown@talismanusa.c ny Mailing Address (noted				Yes	⊠ No
			neration and storage. Wast		atural de	L. se completion		
			at 1247 Fallbrook Road, Wa					
onsite.			,	· · · · · · · · · · · · · · · · · · ·	,			
	•							
Munici	pality	Ward	County Tioga			State	PA	
			nergani, vigo accidenti reggi proggi pr	E DESCRIPTION			- 	
Resid			ual Waste	A		Jnit of		Time
Waste	Code		Description	Amount	☐ cu y	leasure /d ☐ gal		Frame
804		Fracing Fluid Waste	(Flow Back Sand)	348	□ lb			One Time
			1. GENERAL P	ROPERTIES				
a.	pH Ra			(based on analyses or I	knowled	ge)		
b.	Physic	cal State	Liquid Waste (EPA Me	thod 9095)				
				•				
			Solid (EPA Method 90	95)				
			Gas (ambient tempera	95) ture & pressure)				
c.	Physic	cal Appearance	Gas (ambient tempera Color Greyish Black	95) ture & pressure) Odd		ydrocarbon		
C.	Physic	cal Appearance	Gas (ambient tempera Color Greyish Black Number of Solid or Liquid	95) ture & pressure) Odd I Phases of Separation		ydrocarbon ne		
C.	Physic	cal Appearance	Gas (ambient tempera Color Greyish Black	95) ture & pressure) Odd I Phases of Separation				
С.	Physic	cal Appearance	Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	95) ture & pressure) Odd Phases of Separation eparation. Sand				
	-		Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS	95) ture & pressure) Odd Phases of Separation eparation. Sand	n 0	ne	Yes	□ No
а.	The re		Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	95) ture & pressure) Odd Phases of Separation eparation. Sand	n 0	ne 🖂	Yes	□ No
	The re instruc	sults of a detailed cher ctions, is attached. iled description of the	Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS nical characterization of the waste sampling method is a	95) ture & pressure) Ode Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described in	in the	ne 🖂	Yes	☐ No
a.	The re instruct A deta The qu	sults of a detailed cher ctions, is attached. iled description of the uality assurance/quality	Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS nical characterization of the	95) ture & pressure) Ode Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described in	in the	ne 🖂		
a. b.	The reinstruct A deta	sults of a detailed cher ctions, is attached. iled description of the uality assurance/quality	Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS nical characterization of the waste sampling method is a	ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS e waste, as described in attached. yed by the laboratory(in the	ne 🖂	Yes	No
a. b. c.	The reinstruct A deta The quattach	sults of a detailed cher ctions, is attached. iled description of the uality assurance/quality ed. sults of the hazardous	Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS nical characterization of the waste sampling method is a control procedures employ	ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS e waste, as described in attached. yed by the laboratory(in ched.	in the	ne 🖂	Yes Yes	No No

		PROCESS DESCRIPTION			and the same	4.144.00000
a.	A detailed description of the r the waste, as specified in the			ses producing	⊠ Yes	☐ No
b.	A schematic of the manufacture as specified in the instruction		ntrol processes produc	cing the waste,	Yes	□ No
C.	If portions of the information a confidentiality claim, as des			or Yes	No	⊠ N/A
	SECTIO	N C. MANAGEME	NT OF RESIDUA	L WASTE		
		1. Processing or D	ISPOSAL FACILITY(IES)			
The ar	ea below (ad.) will accommod	ate the identification of t	wo facilities. Attach a	dditional sheets	if necessary.	
a.	Solid waste permit number(s) 100361	for processing or dispos	sal facility being utilize	ed.		
b.	Facility Name	McKean County Land	ill			
	Address Line 1	19 Ness Lane				
	Address Line 1					
	Address City State ZIP	Kane	PA PA	16735		
	Municipality	Kane	County	McKean		
C.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931	Email Address	manderfeld@gm	ail.com	
d.	Volume of waste shipped to p 348	rocessing or disposal fa cu yd gal	cility in the previous y ☐ lb ton	ear. (check one)		
a.	Solid waste permit number(s)	for processing or dispos	sal facility being utilize	ed.		
b.	Facility Name					
	Address Line 1					
	Address Line 1					
	Address City State ZIP					
	Municipality		County			
C.	Facility Contact Name					
	Title					
	Phone		Email Address			
d.	Volume of waste shipped to p					
		cu yd 🔲 gal	☐ Ib ☐ ton	(check one)		
- E		2. Bener	ICIÁL USE			
a.	Has the waste been approved	for beneficial use?			Yes	⊠ No
	If "Yes", list the general permi	t number or approval nu	mber.			
b.	Volume of waste beneficially u	sed in the previous year				
	0	cu yd 🔲 gal	☐ Ib ☐ ton	(check one)		

			SECTION D. CERTIFICATION
Repo obtain know	rt and all attached docu ning the information, I ledge. I understand that	ments verify the s	ave personally examined and am familiar with the information submitted in this Annua and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S on to authorities, which include fine and imprisonment.
Chec	k the following, if applical	ble:	
	I certify the information and has not chan	-	red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not chan	-	red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information for the year and h		ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina l	Brown		
Signa	tureh		Date $2(25/1)$

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Work Order: 10053433

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10053433

COMPANY: Talisman Energy USA, Inc.
ADDRESS: 337 Daniel Zenker Dr PAGE: 1 of 5

Horseheads, NY 14845 PO#:

PHONE: (607) 562-4000 **TEST REPORT** PWS ID#

PHONE: (607) 562-4000 FAX: (607) 562-4001

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2 DATE: 05/25/2010 8:54 Page 1 of 5

SAMPLE: Flowback Sand		Lab I	D: 10053433-001A	Compo	site		
SAMPLED BY: SG	San	nple Tim	e: 05/24/2010 17:00	01.00			
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	331 mg/Kg-dry		EPA 6010B	114	05/25/10 11:50	05/27/10	GSR-CV
Bromine	< 4.6 mg/kg	N	HACH 8167		05/26/10 10:29	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
2-Butanone	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

MANIA OFF	(''	m. Tout	D A T.	6/1/2010	
MANAGER	ani	M. Davis	DATE:	6/1/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Steve Gridley

ADDRESS:

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10053433

PAGE:

2 of 5

PO#:

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

TEST REPORT

PWS ID#

DCNR58702 Pad 17

RECEIVED FOR LAR BY: DLM2

DATE, OFIDEIDOAD OLEA

RE	CEIVED FOR LAB BY: DLM2	DATE	: 0	5/25/2010 8:54			P	age 2 of 5
	Toluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,1,2-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Tetrachloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Dibromochloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,2-Dibromoethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Chlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Ethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Xylenes, Total	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Bromoform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,2,3-Trichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,3-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,4-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,2-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Acrolein	< 2.09 mg/Kg-dry		EPA 8260B	2.09	05/27/10 19:36	05/27/10	DN-CV
	Carbon disulfide	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	MTBE	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Acrylonitrile	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
	Acetone	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
	Vinyl acetate	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	2,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	Tetrahydrofuran	< 0.209 mg/Kg-dry	Ν	EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
	Bromochloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,1-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
	1,3-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter is not NELAC certified Ν
- U Ammonia sample not distilled

MANAGER (m.) DAT	E: 6/1/20.	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

ADDRESS:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10053433

PAGE: 3 of 5

PO#:

PWS ID#

(607) 562-4000

PHONE: FAX: (607) 562-4001

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2 DATE: 05/25/2010 8:54 Page 3 of 5

TEST REPORT

< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
735 mg/Kg-dry		EPA 300.0	52.2	05/26/10 15:48	05/27/10	HDP-CV
1.1 mg/Kg-dry	N	NIOSH 3500	1.0	05/27/10 7:30	05/27/10	LTW-CV
4.3 %	N	SM2540G		05/25/10 11:35	05/27/10	DMB-CV
	< 0.042 mg/Kg-dry	< 0.042 mg/Kg-dry < 1.042 mg/Kg-dry < 0.042 mg/Kg-dry	 < 0.042 mg/Kg-dry < 0.042 mg/K	 < 0.042 mg/Kg-dry < 0.043 mg/Kg-dry < 0.044 mg/Kg-dry < 0.045 mg/Kg-dry < 0.042 mg/Kg-dry < 0.042 mg/Kg-dry < 0.043 mg/Kg-dry < 0.044 mg/K	 < 0.042 mg/Kg-dry < 0.05/27/10 19:36 < 0.05/27/10 19:36 < 0.05/27/10 19:36 	 < 0.042 mg/Kg-dry < 0.042 mg/

SAMPLE: Flowback Sand

Lab ID: 10053433-001B

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:00

				SLOQ				
<u>Test</u>	<u>Result</u>		<u>Method</u>		Analysis Start	Analysis End	Analyst *	
Ammonia as N	< 10 mg/kg-dry	U	Lachat	10	05/27/10 12:00	05/27/10	JP-SA	
Free Liquid	< 0.1 %		EPA 9095A	0.1	05/25/10 12:05	05/25/10	IC-SA	
рH	8.30@22.4°C		EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA	
Phosphorus	< 5 mg/kg-dry		EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA	

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter is not NELAC certified Ν
- Ammonia sample not distilled U

MANAGER	Carrie M. Carris	DATE:	6/1/2010
			The state of the s

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PAGE:

4 of 5

10053433

PO#:

WO#:

TEST REPORT

PWS ID#

(607) 562-4000 FAX: (607) 562-4001

PHONE:

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2 DATE: 05/25/2010 8:54

Page 4 of 5

D/(1 E.	00/20/2010 0:04			,	ige 4 01 3
L	ab ID: 10053433-001C	Compo	site		
Sample	Time: 05/24/2010 17:00	01.00			
Result	Method	SLOQ	Analysis Start	Analysis End	Analvst *
< 1.00 mg/Kg	Glycols by 8015	1.00	05/26/10 0:00	05/27/10	
< 1.00 mg/kg	Glycols by 8015	1.00	05/26/10 0:00	05/27/10	
by Life Science					
L	ab ID: 10053433-001D	Compo	site		
Sample	Time: 05/24/2010 17:00				
Danill	Madhaad	SLOQ	Ameliania Otani	A	A b b .
		4.00			Analyst '
• •	EPA 9065	1.29	05/27/10 8:45	05/27/10	
by QC Laboratories.					
L	ab ID: 10053433-001E	Compo	site		
Sample	Time: 05/24/2010 17:00				
Popult	Mothod	<u>SLOQ</u>	Analysis Stort	Analysis End	Analyst '
-		345			AllalySt
	LFA 3071	343	03/20/10 11:00	03/20/10	
T DY WIICTODAC-LITE					
ack Sand	ab ID: 10053433-001G	Compo	site		
Sample	Time: 05/26/2010 7:50	01.00			
Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
		0.0008			JRA-CV
ŭ					GSR-C\
· ·					GSR-C\
•					GSR-C\
· ·					GSR-C\
·					GSR-C\
ŭ					GSR-CV
0.000 1119/2	2. 7, 00, 00	0.000		00,	COI (-O (
	Result < 1.00 mg/Kg < 1.00 mg/kg d by Life Science Lisample Result < 1.29 mg/Kg DRY d by QC Laboratories. Lisample Result < 345 mg/Kg d by Microbac-Erie Lick Samd	< 1.00 mg/Kg < 1.00 mg/kg Glycols by 8015 I by Life Science Lab ID: 10053433-001D Sample Time: 05/24/2010 17:00 Result < 1.29 mg/Kg DRY EPA 9065 I by QC Laboratories. Lab ID: 10053433-001E Sample Time: 05/24/2010 17:00 Result < 345 mg/Kg EPA 9071 I by Microbac-Erie ack Sand Lab ID: 10053433-001E Sample Time: 05/24/2010 17:00 Result < 345 mg/Kg EPA 9071 I by Microbac-Erie ack Sand Lab ID: 10053433-001G Sample Time: 05/26/2010 7:50 Result < 0.0008 mg/L < 0.500 mg/L < PA 6010B < 0.100 mg/L EPA 6010B < 0.500 mg/L < EPA 6010B < 0.500 mg/L < EPA 6010B < PA 6010B < 0.500 mg/L < PA 6010B < PA 601	Lab ID: 10053433-001C Composition	Lab ID: 10053433-001C Composite	Lab ID: 10053433-001C Sample Time: 05/24/2010 17:00 Result

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter is not NELAC certified
- Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	6/1/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

337 Daniel Zenker Dr ADDRESS:

Horseheads, NY 14845

TEST REPORT

WO#: 10053433

PAGE: 5 of 5

PO#:

PWS ID#

PHONE:

(607) 562-4000

FAX: (607) 562-4001

DCNR58702 Pad 17						
RECEIVED FOR LAB BY: DLM2	DATE: (Page 5 of 5		
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Zinc - TCLP extracted	< 0.200 ma/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

Parameter is not NELAC certified Ν

U Ammonia sample not distilled

MANAGER	ani M. Oarles	DATE:	6/1/2010



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed or le	gibly printed in thed sheet as l	the spaces pi Form 26R, re	y completed. All requi rovided. If additional sp ference the item numb needs to match the date	ace is necessary, ide er and identify the	ntify Date	DEP U e Received		NLY neral Notes
General R	eference 287.54							
Date Prep	red/Revised	Febru	ary 11, 2011					
	SEC [*]	TION A. C	LIENT (GENERATOR	R OF THE WASTE) I	NFORMA	TION		
Company								
	Energy USA Inc							
	iary, Name of Pa	arent Compan	у				ienera	itor ID#
	Energy Inc.	124				N/A		
50 Pennw	Mailing Address	Line 1	G	ompany Mailing Addr	ess Line 2			
	Address Last Lir	ne – City	State	Zip+4	Phone			Ext
Warrenda		ie – City	PA PA	15086		814-5300	1	LXI
	Contact Last Na	me	First Name	MI	(12.)	Suffix		
Brown			Dina					
Municipali	ty		(County				
Warrenda	е			Allegheny				
Contact P			Contact Email Address					
(724) 814			ybrown@talismanusa.c					
			Mailing Address (noted				∕es 	⊠ No
			ation and storage. <u>Wast</u> 560 Fallbrook Road, Ward					
onsite.	02-016 well pau s	site located at	360 Falibrook Road, Ward	i Township, Hoga Coul	ity, PA. The v	waste is te	empor	anily stored
Municipali	y Ward		County Tioga		Sta	ate	PA	
	t y Ward	aranasa kanasana kanasana	County Tioga	E DESCRIPTION		ate	PA	
		aranasa kanasana kanasana	ECTION B. WAST	E DESCRIPTION			PA	Time
Municipali		Š	ECTION B. WAST Waste	E DESCRIPTION		of	PA	Time Frame
Municipali Residua	le le	Residual Code Des	ECTION B. WAST Waste	_	Unit o Measu □ cu yd	of re □ gal		Frame
Municipali Residua Waste Cod	le le	Residual Code Des	ECTION B. WAST Waste cription ow Back Sand)	Amount 442	Unit o Measu □ cu yd	of re		
Municipali Residua Waste Cod	le Fracing Flu	Residual Code Des id Waste (Flo	ECTION B. WAST Waste cription ow Back Sand) 1. GENERAL P	Amount 442 ROPERTIËS	Unit o Measu Cu yd	of re □ gal		Frame
Municipali Residua Waste Cod 804 a. pH	Fracing Flu	Residual Code Des	ECTION B. WAST Waste cription ow Back Sand) 1. GENERAL P to	Amount 442 ROPERTIES (based on analyses or	Unit o Measu Cu yd	of re □ gal		Frame
Municipali Residua Waste Cod 804 a. pH	le Fracing Flu	Residual Code Des id Waste (Flo 7.76	Waste cription Waste Sand) 1. GENERAL P to Liquid Waste (EPA Me	Amount 442 ROPERTIES (based on analyses or othod 9095)	Unit o Measu Cu yd	of re □ gal		Frame
Municipali Residua Waste Cod 804 a. pH	Fracing Flu	Residual Code Des id Waste (Flo	Waste cription by Back Sand) 1. GENERAL P to Liquid Waste (EPA Me	Amount 442 ROPERTIES (based on analyses or thod 9095) 95)	Unit o Measu Cu yd	of re □ gal		Frame
Residua Waste Cod 804 a. pH b. Ph	Fracing Flu	Residual Code Des id Waste (Flo	ECTION B. WAST Waste cription bw Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera	Amount 442 POPERTIES (based on analyses or sthod 9095) 95) ture & pressure)	Unit o Measu Cu yd Ib knowledge)	of re gal ton		Frame
Residua Waste Cod 804 a. pH b. Ph	Fracing Flu Range /sical State	Residual Code Des id Waste (Flo	Waste cription by Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909) Gas (ambient tempera	Amount 442 ROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Od	Unit of Measu	of re gal ton		Frame
Residua Waste Cod 804 a. pH b. Ph	Fracing Flu Range /sical State	Residual Code Des id Waste (Flo 7.76	Waste cription Dow Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909) Gas (ambient temperation) Greyish Black	Amount 442 ROPERTIES (based on analyses or bithod 9095) 95) ture & pressure) Odd Phases of Separatio	Unit o Measu Cu yd Ib knowledge)	of re gal ton		Frame
Residua Waste Cod 804 a. pH b. Ph	Fracing Flu Range /sical State	Residual Code Des id Waste (Flo 7.76	DECTION B. WAST Waste cription DW Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 900) Gas (ambient temperated of Solid or Liquid escribe each phase of secribe each phase of secription	Amount 442 ROPERTIES (based on analyses or bithod 9095) 95) ture & pressure) Odd Phases of Separatio eparation. Sand	Unit o Measu Cu yd Ib knowledge)	of re gal ton		Frame
Residua Waste Coo 804 a. pH b. Ph	Range /sical State	Residual Code Des id Waste (Flo	ECTION B. WAST Waste cription DW Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid escribe each phase of solid Schematical Color Colo	Amount 442 ROPERTIES (based on analyses or bithod 9095) 95) ture & pressure) Odd Phases of Separatio eparation. Sand	Unit o Measu Cu yd Ib knowledge)	of re gal S ton		Frame One Time
Residua Waste Coo 804 a. pH b. Ph c. Ph	Fracing Flu Range /sical State /sical Appearance	Residual Code Des id Waste (Flo	DECTION B. WAST Waste cription DW Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 900) Gas (ambient temperated of Solid or Liquid escribe each phase of secribe each phase of secription	Amount 442 ROPERTIES (based on analyses or bithod 9095) 95) ture & pressure) Odd Phases of Separatio eparation. Sand	Unit o Measu Cu yd Ib knowledge)	of re gal S ton		Frame
Residua Waste Coo 804 a. pH b. Ph c. Ph	Fracing Flu Range /sical State /sical Appearance e results of a det	Residual Code Des id Waste (Flo	ECTION B. WAST Waste cription DW Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid escribe each phase of solid Schematical Color Colo	Amount 442 ROPERTIES (based on analyses or bithod 9095) 95) ture & pressure) Odd Phases of Separatio eparation. Sand SIS ATTACHMENTS E waste, as described	Unit o Measu Cu yd Ib knowledge)	of re gal S ton carbon		Frame One Time
Residua Waste Cod 804 a. pH b. Ph c. Ph a. The ins b. A c c. The	Range /sical State results of a det tructions, is atta etailed descriptic equality assuran	Residual Code Des id Waste (Flo	ECTION B. WAST Waste cription DW Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid escribe each phase of solid characterization of the	Amount 442 ROPERTIES (based on analyses or sthod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	Unit of Measu cu yd blue knowledge) or Hydrocon One in the	of re gal Ston Scarbon		One Time No
Residua Waste Cod 804 a. pH b. Ph c. Ph a. The ins b. A c c. The atta	Range /sical State results of a det tructions, is atta etailed descripti e quality assuran	Residual Code Des id Waste (Flow 7.76 Code Code Code Code Code Code Code Code	ECTION B. WAST Waste cription DW Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid escribe each phase of solid characterization of the stee sampling method is an antrol procedures employ	Amount 442 PROPERTIES (based on analyses or sthod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(Unit of Measu cu yd blue knowledge) or Hydrocon One in the	earbon	'es 'es	One Time One No No No
Residua Waste Cod 804 a. pH b. Ph c. Ph a. The ins b. A c c. The att: d. The	Fracing Flu Range /sical State results of a det tructions, is atta etailed descripti e quality assurance tresults of the h	Residual Code Des id Waste (Flo 7.76 ce C N D ailed chemica ched. on of the was ace/quality co	To Liquid Waste (EPA Me Solid (EPA Method 90%) Gas (ambient temperation Greyish Black umber of Solid or Liquid escribe each phase of solid characterization of the site sampling method is a	Amount 442 ROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS e waste, as described attached. yed by the laboratory(ched.	Unit of Measu cu yd lb knowledge) or Hydrocon One in the	carbon	'es	One Time No No

2540-PM-BWM0347 Rev. 1/2011

	van de verde verde verde verde verde verde v	PROCESS DESCRIPTION & SCHEMATIC ATT	IACHMENIS
а.	A detailed description of the the waste, as specified in the	manufacturing and/or pollution control pro instructions, is attached.	ocesses producing 🛛 Yes 🔲 No
b.	A schematic of the manufactual as specified in the instruction	uring and/or pollution control processes p is, is attached.	roducing the waste, X Yes No
c.		submitted are confidential, the substantial cribed in the instructions, is attached.	tion for Yes No N/A
	SECTION	ON C. MANAGEMENT OF RESID	DUAL WASTE
		1. PROCESSING OR DISPOSAL FACILITY	((IES)
The ar	ea below (ad.) will accommod	ate the identification of two facilities. Atta	ach additional sheets if necessary.
a.	Solid waste permit number(s) 100361	for processing or disposal facility being ι	utilized.
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931 Email Address	manderfeld@gmail.com
d.	442	rocessing or disposal facility in the previo	ton (check one)
d. a.	442		ton (check one)
	Solid waste permit number(s) Facility Name	cu yd 🗌 gal 📗 lb 🖂 t	ton (check one)
a.	Solid waste permit number(s) Facility Name Address Line 1	cu yd 🗌 gal 📗 lb 🖂 t	ton (check one)
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	cu yd 🗌 gal 📗 lb 🖂 t	ton (check one)
a.	Solid waste permit number(s) Facility Name Address Line 1 Address City State ZIP	for processing or disposal facility being u	ton (check one)
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	cu yd 🗌 gal 📗 lb 🖂 t	ton (check one)
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	for processing or disposal facility being u	ton (check one)
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd gal b s	ous year. ton (check one) utilized.
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	for processing or disposal facility being u	ous year. ton (check one) utilized.
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal b string u for processing or disposal facility being u County Email Address rocessing or disposal facility in the previo	ous year. ton (check one) utilized.
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd gal box for processing or disposal facility being u County Email Address rocessing or disposal facility in the previous gal box for the pr	ous year. ton (check one) utilized. ous year.
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal box for processing or disposal facility being u County Email Address rocessing or disposal facility in the previous gal box for the pr	ous year. ton (check one) utilized. ous year.
a. b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd gal box for processing or disposal facility being u County Email Address rocessing or disposal facility in the previous gal box for the pr	ous year. utilized. ous year. ton (check one)
a. b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd	ous year. utilized. ous year. ton (check one)

	SECTION D. CERTIFICATION
Report and all attached doctobtaining the information, I knowledge. I understand that	t I have personally examined and am familiar with the information submitted in this Annuents and that based upon my inquiry of those individuals immediately responsible for ify that the submitted information is true, accurate and complete to the best of more submission of false information herein is made subject to the penalties of 18 Pa. C. station to authorities, which include fine and imprisonment.
Check the following, if applica	
I certify the information and has not char	equired in Section B-1, General Properties was supplied to the Department for the yeard.
Form Submitted:	Form 26R
	Other (specify)
Date Submitted:	
I certify the information	equired in Section B-2, Chemical Analysis was supplied to the Department for the yead.
Form Submitted:	Form 26R
	Other (specify)
Date Submitted:	
I certify the information for the year and	uired in Section B-3, Process Description and Schematic, was supplied to the Department not changed.
Form Submitted:	Form 26R
	Other (specify)
Date Submitted:	
Name of Responsible Official	Title Environmental Specialist
Dina Brown Signature	Date 2(25/11

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Work Order: 10093523

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10093523

COMPANY: Talisman Energy USA, Inc.
ADDRESS: 337 Daniel Zenker Dr PAGE: 1 of 4

Horseheads, NY 14845 PO#: Completions

TEST REPORT PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

DCNR58702 Pad 18

RECEIVED FOR LAB BY: DLM2 DATE: 09/22/2010 11:10 Page 1 of 4

SAMPLE: Flowback Sand		Lab II	D: 10093523-001A	Compo	osite		
SAMPLED BY: SG	San	nple Tim	e: 09/20/2010 15:33	01.00			
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Ethanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Isopropanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
t-Butanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
n-Propanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Isobutanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
n-Butanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Sodium	886 mg/Kg-dry		EPA 6010B	139	09/23/10 10:10	09/23/10	GSR-CV
Bromine	6.90 mg/kg	N	HACH 8167	0.05	09/23/10 11:43	09/23/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
2-Butanone	< 0.208 mg/Kg-dry		EPA 8260B	0.208	09/23/10 15:19	09/24/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	9/29/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Phone: (570) 888-0169

hone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10093523

COMPANY: Talisman Energy USA, Inc.
ADDRESS: 337 Daniel Zenker Dr
PAGE: 2 of 4

Horseheads, NY 14845 PO#: Completions

TEST REPORT PWS ID#

Work Order: 10093523

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DCNR58702 Pad 18							
RECEIVED FOR LAB BY: DLM2	DATE	: 09/	22/2010 11:10			F	age 2 of 4
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Toluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Chloride	1660 mg/Kg-dry		EPA 300.0	52.1	09/22/10 16:55	09/23/10	HDP-CV
Formaldehyde	1.3 mg/Kg-dry	N	NIOSH 3500	1.0	09/27/10 7:50	09/27/10	LTW-CV

REMARKS:

Percent Moisture

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

SM2540G

09/23/10 9:10

09/24/10

IC-SA

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

4.1 %

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

	//		
MANAGER	Carrie M. Davis	DATE:	9/29/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10093523

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10093523

PAGE: 3 of 4

PO#: Completions

PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

DCNR58702 Pad 18

RECEIVED FOR LAB BY: DLM2 DATE: 09/22/2010 11:10 Page 3 of 4

TEST REPORT

THEOLIVED FOR EACH DIT DENIE	D/(IL.	: 00/22/2010 11:10			1 ζ	ig c 3 01 4
SAMPLE: Flowback Sand		Lab ID: 10093523-001B	Compo	osite		
SAMPLED BY: SG	Samp	Sample Time: 09/20/2010 15:33				
<u>Test</u>	Result	<u>Method</u>	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	4.05 %	Moisture Calc.	0.01	09/23/10 9:10	09/24/10	IC-SA
Ammonia as N	32.4 mg/kg-dry	U Lachat	10.4	09/23/10 9:45	09/23/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	09/22/10 17:05	09/22/10	IC-SA
рН	7.76@21.4°C	EPA 9045C		09/23/10 16:34	09/23/10	KAL-SA
Phosphorus	18 mg/kg-dry	EPA 365.3	5	09/23/10 12:00	09/24/10	MED-SA
SAMPLE: Flowback Sand		Lab ID: 10093523-001C	Compo	osite		
SAMPLED BY: SG	Samp	ole Time: 09/20/2010 15:33	SLOQ			
<u>Test</u>	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/24/10 0:00	09/24/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/24/10 0:00	09/24/10	
Sample Note: Analysis performe	d by Summit Environmental	Technologies, Inc.				
SAMPLE: Flowback Sand		Lab ID: 10093523-001D	Compo	site		
SAMPLED BY: SG	Samp	ole Time: 09/20/2010 15:33	SLOQ			
<u>Test</u>	Result	Method		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	11.1 mg/kg Dry	EPA 9065		09/28/10 8:20	09/28/10	
Sample Note: Analysis perfomed	I by QC lab					
SAMPLE: Flowback Sand		Lab ID: 10093523-001E	Compo	site		
SAMPLED BY: SG	Samp	le Time: 09/20/2010 15:33	SLOQ			
<u>Test</u>	Result	<u>Method</u>	<u> </u>	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	760 mg/Kg	EPA 9071		09/24/10 8:30	09/24/10	

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- Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	9/29/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Work Order: 10093523 Sayre, PA 18840

Phone: (570) 888-0169

Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10093523

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr PAGE: 4 of 4

Horseheads, NY 14845 PO#: Completions

TEST REPORT PWS ID#

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DCNR58702 Pad 18

RECEIVED FOR LAB BY: DLM2 DATE: 09/22/2010 11:10 Page 4 of 4

Sample Note: Analysis performed by Microbac-Erie SAMPLE: Flowback Sand Lab ID: 10093523-001G Composite SAMPLED BY: SG Sample Time: 09/23/2010 7:30 <u>SLOQ</u> Analysis End Test Result Method Analysis Start Analyst * Mercury - TCLP extracted < 0.0008 mg/L **EPA 7470A** 0.0008 09/24/10 11:00 09/27/10 KW-CV Arsenic - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/24/10 10:30 09/26/10 RMD-CV < 10.00 mg/L Barium - TCLP extracted **EPA 6010B** 10.00 09/24/10 10:30 09/26/10 RMD-CV < 0.100 mg/L Cadmium - TCLP extracted **EPA 6010B** 0.100 09/24/10 10:30 09/26/10 RMD-CV Chromium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/24/10 10:30 09/26/10 RMD-CV Copper - TCLP extracted < 0.100 mg/L 09/24/10 10:30 09/26/10 **EPA 6010B** 0.100 RMD-CV Lead - TCLP extracted < 0.500 mg/L 09/24/10 10:30 **EPA 6010B** 0.500 09/26/10 RMD-CV Nickel - TCLP extracted < 0.100 mg/L**EPA 6010B** 0.100 09/24/10 10:30 09/26/10 RMD-CV Selenium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/24/10 10:30 09/26/10 RMD-CV Silver - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 09/24/10 10:30 09/26/10 RMD-CV Zinc - TCLP extracted < 0.200 mg/L **EPA 6010B** 0.200 09/24/10 10:30 09/26/10 RMD-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	9/29/2010



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed or each att	legibly printe ached sheet	ed in the spaces as Form 26R,	tely completed. All requi provided. If additional sp reference the item numb ts needs to match the date	ace is necessary, ider er and identify the o	ntify Date Receiv	USE ONLY red & General Notes
General	Reference 28	7.54				
Date Pre	pared/Revise	d Feb	oruary 11, 2011			
	S	ECTION A.	CLIENT (GENERATOR	R OF THE WASTE) I	NFORMATION	
Company	y Name					
	n Energy US					
		of Parent Comp	any			Generator ID#
	n Energy Inc			A alalas	N/A	
	y Mailing Add wood Place	iress Line i	C	ompany Mailing Addre	ess Line Z	
		st Line - City	State	Zip+4	Phone	Ext
Warrend		or Line Oity	PA	15086	(724) 814-53	
	y Contact Las	st Name	First Name	MI	Suff	
Brown	_		Dina			
Municipa				County		
Warrend Contact I			Contact Email Address	Allegheny		
(724) 81		Ext	dybrown@talismanusa.c	om		
		d at the Compar	y Mailing Address (noted a			Yes No
			eration and storage. Wast		ت atural gas completior	
			1456 Fairbanks Road, Colum			
stored on	site.					
Municipa	dito /	Calumbia	County Dradfa	, m.d	State	PA
Municipa	inty (Columbia	County Bradfo			PA
Residu		- Baaidi	SECTION B. WAST	EDESCRIPTION	Unit of	Time
Waste Co			escription	Amount	Measure	Frame
					·	
804		~ Fluid Masta (I		740	☐ cu yd ☐ gal	
	Tracing	g Fluid Waste (Flow Back Sand)	718	☐ cu yd ☐ gal ☐ lb ☐ ton	☐ One Time
	1		Flow Back Sand) 1. GENERAL P	ROPERTIES	☐ lb	One Time
	H Range	8.2	Flow Back Sand) 1. GENERAL P 1 to	ROPERTIES (based on analyses or l	☐ lb	One Time
	1	8.2	Flow Back Sand) 1. GENERAL P 1 to Liquid Waste (EPA Me	ROPERTIES (based on analyses or lithod 9095)	☐ lb	One Time
	H Range	8.2	Flow Back Sand) 1. GENERAL P 1. to Liquid Waste (EPA Me Solid (EPA Method 909	ROPERTIES (based on analyses or lefthod 9095)	☐ lb	One Time
b. P	H Range hysical State	8.2	Flow Back Sand) 1. GENERAL P 1. to Liquid Waste (EPA Me Solid (EPA Method 908 Gas (ambient temperat	ROPERTIES (based on analyses or lefthod 9095) 95) ture & pressure)	☐ Ib ☐ ton knowledge)	One Time
b. P	H Range	8.2	The state of the s	ROPERTIES (based on analyses or lefthod 9095) 95) ture & pressure) Odd	□ lb ☑ ton knowledge) Pr Hydrocarbon	One Time
b. P	H Range hysical State	8.2	Toolor General P 1. General P 1. to Liquid Waste (EPA Me Solid (EPA Method 90s Gas (ambient temperat Color Greyish Black Number of Solid or Liquid	ROPERTIES (based on analyses or lethod 9095) 95) ture & pressure) Odd Phases of Separation	lb ⊠ ton knowledge) or Hydrocarbon	One Time
b. P	H Range hysical State	8.2	The state of the s	ROPERTIES (based on analyses or lethod 9095) 95) ture & pressure) Odd Phases of Separation	□ lb ☑ ton knowledge) Pr Hydrocarbon	One Time
b. P	H Range hysical State	8.2	Toolor General P 1. General P 1. to Liquid Waste (EPA Me Solid (EPA Method 90s Gas (ambient temperat Color Greyish Black Number of Solid or Liquid	ROPERTIES (based on analyses or lethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	□ lb ☑ ton knowledge) Pr Hydrocarbon	One Time
b. P	H Range hysical State hysical Appe	8.2 arance a detailed chem	Tow Back Sand) 1. GENERAL P 1. to Liquid Waste (EPA Me Solid (EPA Method 90s Gas (ambient temperat Color Greyish Black Number of Solid or Liquid Describe each phase of so	ROPERTIES (based on analyses or lithod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	ib ⊠ ton knowledge) pr Hydrocarbon n One	Yes No
b. P	H Range hysical State hysical Appe he results of	8.2 arance a detailed chems attached.	The state of the s	ROPERTIES (based on analyses or lethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS e waste, as described in	ib 🗵 ton knowledge) Pr Hydrocarbon One In the	Yes No
b. P c. P a. TI in b. A	H Range hysical State hysical Appe he results of structions, is	8.2 arance a detailed chems attached. cription of the w	The state of the s	ROPERTIES (based on analyses or lithod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described intached.	ib 🗵 ton knowledge) Pr Hydrocarbon One In the	Yes No
b. Proceedings of the process of the	H Range hysical State hysical Appe he results of estructions, is detailed des he quality ass ttached.	a detailed chems attached. cription of the wasurance/quality	The state of the s	ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described intached. yed by the laboratory(ib 🗵 ton knowledge) Pr Hydrocarbon One In the	Yes No
b. Proceedings of the process of the	H Range hysical State hysical Appe he results of estructions, is detailed des he quality ass ttached. he results of	a detailed chems attached. cription of the wasurance/quality	To Back Sand) 1. GENERAL P 1. to Liquid Waste (EPA Me Solid (EPA Method 90% Gas (ambient temperated of Solid or Liquid Describe each phase of Solid characterization of the control procedures employ waste determination is attacted.	ROPERTIES (based on analyses or lethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS e waste, as described intrached. Great by the laboratory(ched.	ib 🗵 ton knowledge) Pr Hydrocarbon One In the	Yes No
b. Proceedings of the control of the	H Range hysical State hysical Appe he results of estructions, is detailed des he quality ass ttached. he results of applicable, a	a detailed chems attached. cription of the wasurance/quality	To Back Sand) 1. GENERAL P 1. to Liquid Waste (EPA Me Solid (EPA Method 90% Gas (ambient temperated of Solid or Liquid Describe each phase of solid characterization of the state sampling method is a control procedures employeaste determination is attactation supporting use of getain to 1. GENERAL P 1. GENE	ROPERTIES (based on analyses or lethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS e waste, as described intrached. Great by the laboratory(ched.	ies) is ton the ton the ton the ton ton the ton	Yes No Yes No Yes No

2540-PM-BWM0347 Rev. 1/2011

	J.	PROCESS DESCRIPTION				
a.	A detailed description of the the waste, as specified in the			sses producing	⊠ Yes	No _
b.	A schematic of the manufacture as specified in the instruction		ntrol processes proc	lucing the waste,	⊠ Yes	No
C.	If portions of the information a confidentiality claim, as des			n for Yes	☐ No	⊠ N/A
	SECTION	ON C. MANAGEME	ENT OF RESIDU	IAL WASTE		
		1. Processing or D	DISPOSAL FACILITY (IE	S)		
The ar	ea below (ad.) will accommod	ate the identification of t	two facilities. Attach	additional sheets	if necessary	•
a.	Solid waste permit number(s) 100361	for processing or dispo	sal facility being util	ized.		
b.	Facility Name	McKean County Land	fill			
	Address Line 1	19 Ness Lane		,		
	Address Line 1					
	Address City State ZIP	Kane	PA .	16735		
	Municipality	Kane	County	McKean		
c.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931	Email Address	manderfeld@gn	nail.com	
d.	Volume of waste shipped to p	rocessing or disposal fa cu yd gal	cility in the previous	s year. (check one		
d. a.	Volume of waste shipped to p	rocessing or disposal fa cu yd gal	cility in the previous	s year. (check one		
	Volume of waste shipped to p	rocessing or disposal fa cu yd gal	cility in the previous	s year. (check one		
а.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1	rocessing or disposal fa cu yd gal	cility in the previous	s year. (check one		
а.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	rocessing or disposal fa cu yd gal	cility in the previous	s year. (check one		
а.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address City State ZIP	rocessing or disposal fa cu yd gal	icility in the previous ightharpoonup ib ightharpoonup it in it is in it is included in its included	s year. (check one		
а.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	rocessing or disposal fa cu yd gal	cility in the previous	s year. (check one		
а.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal fa cu yd gal	icility in the previous ightharpoonup ib ightharpoonup it in it is in it is included in its included	s year. (check one		
a.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal fa cu yd gal	cility in the previous to b ton sal facility being utili County	s year. (check one		
a.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal fa cu yd gal	icility in the previous ightharpoonup ib ightharpoonup it in it is in it is included in its included	s year. (check one		
a.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal facuyd	cility in the previous lb	ized.	•)	
a. b.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal facuyd	cility in the previous lb	is year. i (check one	•)	
a. b.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal facuyd	County Email Address cility in the previous	is year. i (check one	•)	No
a. b. c.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p Has the waste been approved If "Yes", list the general perm	rocessing or disposal facuyd	County Email Address cility in the previous County Email Address cility in the previous b ton	is year. i (check one	•)	No
a. b. c.	Volume of waste shipped to p 718 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal facuyd	County Email Address cility in the previous County Email Address cility in the previous b ton	s year. (check one	Yes	No

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this A Report and all attached documents and that based upon my inquiry of those individuals immediately responsib obtaining the information, I verify that the submitted information is true, accurate and complete to the best of knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa §4904, relating to unsworn falsification to authorities, which include fine and imprisonment. Check the following, if applicable:	le for
Check the following if applicable:	
oncor the following, it approads:	
I certify the information required in Section B-1, General Properties was supplied to the Department for the and has not changed.	year
Form Submitted: Form 26R	
Other (specify)	
Date Submitted:	
I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the and has not changed.	year
Form Submitted: Form 26R	
Other (specify)	
Date Submitted:	
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Depart for the year and has not changed.	:ment
Form Submitted: Form 26R	
Other (specify)	
Date Submitted:	
Name of Responsible Official Title Environmental Specialist	
Dina Brown	
Signature Date 2/25/1	

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Work Order: 10080716

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10080716

COMPANY: Talisman Energy USA, Inc.
ADDRESS: 337 Daniel Zenker Dr PAGE: 1 of 5

Horseheads, NY 14845

PO#:

TEST REPORT PWS ID#

PHONE: (607) 562-4000 FAX: (607) 562-4001

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RECEIVED FOR LAB BY: DLM2 DATE: 08/05/2010 9:50 Page 1 of 5

SAMPLE: Flowback Sand		Lab I	D: 10080716-001A	Compo	site		
SAMPLED BY: LS	Sam	nple Tim	ne: 08/04/2010 10:00	0.0=			
Test	Result		Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Sodium	116 mg/Kg-dry		EPA 6010B	37.8	08/09/10 13:00	08/10/10	RMD-CV
Bromine	< 0.46 mg/kg	Ν	HACH 8167	0.46	08/10/10 16:00	08/10/10	TLB-CV
1,1-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Methylene chloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2-Butanone	< 0.203 mg/Kg-dry		EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
trans-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
cis-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Chloroform	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,1-Trichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Carbon tetrachloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Benzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Trichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Dibromomethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Bromodichloromethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
cis-1,3-Dichloropropene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

	//		
MANAGER	Chris M. Davis	DATE:	8/10/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Work Order: 10080716

PWS ID#

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10080716

COMPANY: Talisman Energy USA, Inc.
ADDRESS: 337 Daniel Zenker Dr
PAGE: 2 of 5

Horseheads, NY 14845 PO#:

(607) FG2 4000 TEST REPORT

PHONE: (607) 562-4000 FAX: (607) 562-4001

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RECEIVED FOR LAB BY: DLM2	DATE:	: 08/05/2	2010 9:50			Pa	age 2 of 5
Toluene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
trans-1,3-Dichloropropene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,2-Trichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Tetrachloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Dibromochloromethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dibromoethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Chlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Ethylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Xylenes, Total	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Bromoform	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,3-Trichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,3-Dichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,4-Dichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Acrolein	< 2.03 mg/Kg-dry		EPA 8260B	2.03	08/09/10 14:42	08/10/10	DN-CV
Carbon disulfide	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
MTBE	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Acrylonitrile	< 0.203 mg/Kg-dry		EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Acetone	< 0.203 mg/Kg-dry		EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Vinyl acetate	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2,2-Dichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Tetrahydrofuran	< 0.203 mg/Kg-dry	N	EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Bromochloromethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1-Dichloropropene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2-Chloroethyl vinyl ether	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,3-Dichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

MANAGER	Carrie M. Darkes	DATE:	8/10/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Work Order: 10080716

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10080716

COMPANY: Talisman Energy USA, Inc. PAGE: 3 of 5 ADDRESS:

337 Daniel Zenker Dr Horseheads, NY 14845

PO#:

PWS ID# **TEST REPORT**

PHONE: (607) 562-4000 FAX: (607) 562-4001

1	3	

RECEIVED FOR LAB BY: DLM2	DATE:	08/	05/2010 9:50			P	age 3 of 5
2-Hexanone	< 0.203 mg/Kg-dry		EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Styrene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Cumene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Bromobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
n-Propylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2-Chlorotoluene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
4-Chlorotoluene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,3,5-Trimethylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
tert-Butylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,4-Trimethylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
sec-Butylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
p-Isopropyltoluene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
n-Butylbenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,4-Trichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Hexachlorobutadiene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Naphthalene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,3-Trichlorobenzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Chloride	302 mg/Kg-dry		EPA 300.0	50.9	08/06/10 13:50	08/07/10	HDP-CV
Formaldehyde	4.0 mg/Kg-dry	N	NIOSH 3500	1.0	08/10/10 8:30	08/10/10	LTW-CV
Percent Moisture	1.7 %		SM2540G		08/09/10 14:45	08/10/10	NFM-SA

SAMPLE: Flowback Sand

SAMPLED BY: LS Sample Time: 08/04/2010 10:00

SLOQ

Test	<u>Result</u>		Method		Analysis Start	Analysis End	Analyst *
Moisture	1.71 %		Moisture Calc.	0.01	08/09/10 14:45	08/10/10	NFM-SA
Ammonia as N	35.6 mg/kg-dry	U	Lachat	10.2	08/05/10 12:03	08/05/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	08/05/10 14:10	08/05/10	IC-SA
pН	8.21@22.1°C		EPA 9045C		08/06/10 14:21	08/06/10	SG-SA

Lab ID: 10080716-001B

Composite

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

Parameter is not NELAC certified

Ammonia sample not distilled

Carrie M. Davis DATE: 8/10/2010 **MANAGER**

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Work Order: 10080716 Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10080716

PAGE: 4 of 5

PO#:

PWS ID#

TEST REPORT

PHONE: FAX:

13

(607) 562-4000

(607) 562-4001

RECEIVED FOR LAB BY: DLM2	DATE:	08/05/2010 9:50			P	age 4 of 5
Phosphorus	106 mg/kg-dry	EPA 365.3	5	08/09/10 15:05	08/10/10	JP-SA
SAMPLE: Flowback Sand	L	ab ID: 10080716-001C	Compo	site		
SAMPLED BY: LS	Sample	Time: 08/04/2010 10:00	SLOQ			
<u>Test</u>	Result	<u>Method</u>	<u> </u>	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	08/06/10 0:00	08/06/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	08/06/10 0:00	08/06/10	
Sample Note: Analysis performed b	y Summit Environmental Te	echnologies, Inc.				
SAMPLE: Flowback Sand	L	ab ID: 10080716-001D	Compo	site		
SAMPLED BY: LS	Sample	Time: 08/04/2010 10:00	01.00			
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	2.94 mg/Kg Dry	EPA 9065		08/10/10 7:45	08/10/10	
Sample Note: Analysis performed b	y QC Lab					
SAMPLE: Flowback Sand	L	ab ID: 10080716-001E	Compo	site		
SAMPLED BY: LS	Sample	Time: 08/04/2010 10:00	SLOQ			
<u>Test</u>	Result	<u>Method</u>	<u> </u>	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	1570 mg/Kg	EPA 9071		08/09/10 11:25	08/09/10	
Sample Note: Analysis performed b	y Microbac-Erie					
SAMPLE: TCLP Leachate of Flowbac	k Sand L	ab ID: 10080716-001G	Compo	site		
SAMPLED BY: LS	Sample	Time: 08/06/2010 7:45				
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	08/09/10 9:00	08/10/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/09/10 10:30	08/09/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	08/09/10 10:30	08/09/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/09/10 10:30	08/09/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/09/10 10:30	08/09/10	RMD-CV
					· · -	

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter is not NELAC certified
- Ammonia sample not distilled

	//		
MANAGER	Churi M. Davis	DATE:	8/10/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10080716

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley WO#: 10080716

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr ADDRESS:

PAGE: 5 of 5

Horseheads, NY 14845

PO#:

PWS ID#

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

	- 0-
RECEIVED FOR LAB BY: DLM2 DATE: 08/05/2010 9:50 Pag	5 of 5
Copper - TCLP extracted 0.142 mg/L EPA 6010B 0.100 08/09/10 10:30 08/09/10 F	MD-CV
Lead - TCLP extracted < 0.500 mg/L EPA 6010B 0.500 08/09/10 10:30 08/09/10 F	MD-CV
Nickel - TCLP extracted < 0.100 mg/L EPA 6010B 0.100 08/09/10 10:30 08/09/10 F	MD-CV
Selenium - TCLP extracted < 0.500 mg/L EPA 6010B 0.500 08/09/10 10:30 08/09/10 F	MD-CV
Silver - TCLP extracted < 0.100 mg/L EPA 6010B 0.100 08/09/10 10:30 08/09/10 F	MD-CV
Zinc - TCLP extracted 0.716 mg/L EPA 6010B 0.200 08/09/10 10:30 08/09/10 F	MD-CV

TEST REPORT

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; ŠA = Benchmark Analytics, Inc. Sayre, PA
- Parameter is not NELAC certified Ν
- U Ammonia sample not distilled

	// > .		
MANAGER	Carrie M. Davis	DATE:	8/10/2010



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed or le each attac	gibly printed in the hed sheet as For	accurately complete spaces provided. If m 26R, reference the ed sheets needs to ma	additional spa item numbe	ce is necessary, ider r and identify the o	ntify [DEPU Date Receive		
General Re	ference 287.54							
Date Prepa	red/Revised	February 11, 2011						
		ON A. CLIENT (G	ENERATOR	OF THE WASTE) I	NFORM	ATION		
Company !								
	nergy USA Inc.	-4 C				EDA (·	-4 ID#
Talisman E	ary, Name of Parer	nt Company				N/A	ener	ator ID#
	lailing Address Lir	ne 1	Co	mpany Mailing Addre	ess line 2	13/73		
50 Pennwo		10 1	00	mpany maning Addit	JOS EINO E			
	ddress Last Line -	- City	State	Zip+4	Pho	ne		Ext
Warrendal	e	•	PA	15086	(724	1) 814-530	0	
Company (ontact Last Name	First	Name	MI		Suffix		
Brown		Dina						
Municipalit Warrendal				ounty legheny				
Contact Ph		xt Contact Ema		legheny				
(724) 814-			alismanusa.cc	om				
		Company Mailing Add				П	Yes	⊠ No
		aste generation and st			atural gas o	completion of	operat	
		located at 5290 Fallbro	ok Road, Troy	Township, Bradford Co	ounty, PA.	The waste	is tem	porarily
stored onsit) .							
Municipalit	y Troy	Coun	ty Bradfor	d		State	РА	
•	,,			DESCRIPTION				
Residual		Residual Waste	D. 117.101.	2 D2 GOTAII 11 GIS		it of	l	Time
Waste Cod	e	Code Description		Amount		sure		Frame
804	Fracing Fluid \	Waste (Flow Back Sa	and)	85	☐ cu yd	☐ gal		
	3		GENERAL PR		_ lb	⊠ ton	<u> </u>	One Time
a. pH	Range	8,62 to		pased on analyses or	knowledae)		
	sical State		aste (EPA Meth		Milomougo	/		
~,			PA Method 909					
			bient temperatu	•				
c. Phy	sical Appearance	Color G	reyish Black	Od	or Hyd	rocarbon		
_				Phases of Separation				
		Describe eac	h phase of se	paration. <u>Sand</u>				
				•				
71		The second secon	Signature and report about the rest and defined the rest of the second o	S ATTACHMENTS	! 4I	<u> </u>	N/	
	results of a detaile ructions, is attache	ed chemical character ed.	ization of the v	waste, as described	in the		Yes	☐ No
		of the waste sampling				\square	Yes	No
c. The	taneu description	or the waste sampling	g method is at	tacned.				
	quality assurance	quality control proce	 		ies) is		Yes	☐ No
atta	quality assurance	quality control proce	dures employe	ed by the laboratory(ies) is			
atta d. The	quality assurance ched. results of the haza		dures employenation is attac	ed by the laboratory(hed.			Yes Yes No	□ No □ No □ N/A

2540-PM-BWM0347 Rev. 1/2011

A Caston		PROCESS DESCRIPTION & Se				
a.	A detailed description of the the waste, as specified in the		on control proce	sses producing	⊠ Yes	☐ No
b.	A schematic of the manufactual as specified in the instruction		processes prod	lucing the waste,	∑ Yes	☐ No
C.	If portions of the information a confidentiality claim, as des			n for 🔲 Yes	☐ No	⊠ N/A
	SECTION	N C. MANAGEMENT	OF RESIDU	AL WASTE		
		1. PROCESSING OR DISPO				
The ar	ea below (ad.) will accommod	ate the identification of two	facilities. Attach	additional sheets	s if necessary	7.
a.	Solid waste permit number(s) 100361	for processing or disposal f	acility being utili	zed.		
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane				
	Address Line 1					
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County	McKean		
C.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931 E	mail Address	manderfeld@gr	nail.com	
d.	Volume of waste shipped to p	rocessing or disposal facilit cu yd gal	y in the previous	year. (check one		
d.	Volume of waste shipped to p 85 Solid waste permit number(s)	rocessing or disposal facilit cu yd gal	y in the previous	year. (check one		
	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name	rocessing or disposal facilit cu yd gal	y in the previous Ib ⊠ ton	year. (check one		
a.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1	rocessing or disposal facilit cu yd gal	y in the previous Ib ⊠ ton	year. (check one		
a.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	rocessing or disposal facilit cu yd gal	y in the previous Ib ⊠ ton	year. (check one		
a.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP	rocessing or disposal facilit cu yd gal	y in the previous lb 🔀 ton acility being utili	year. (check one		
a.	Volume of waste shipped to p 85	rocessing or disposal facilit cu yd gal	y in the previous Ib ⊠ ton	year. (check one		
a.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal facilit cu yd gal	y in the previous lb 🔀 ton acility being utili	year. (check one		
a. b.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal facilit cu yd	y in the previous lb	year. (check one		
a. b.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal facilit cu yd	y in the previous lb 🔀 ton acility being utili	year. (check one		
a. b.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal facilit cu yd	y in the previous lb	year. (check one	e)	
a. b.	Volume of waste shipped to p 85	rocessing or disposal facilit cu yd	y in the previous lb	check one	e)	
a. b.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal facilit cu yd	y in the previous lb	check one	e)	No
a. b. c.	Volume of waste shipped to p 85 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p Has the waste been approved If "Yes", list the general perm	rocessing or disposal facilit cu yd	y in the previous b	check one	e)	No No
a. b. c.	Volume of waste shipped to p 85	rocessing or disposal facilit cu yd	y in the previous b	year. (check one	e) Yes	No No

			SECTION D. CERTIFICATION
Repoi obtair knowl	rt and all attached docu ning the information, I w ledge. I understand that	ments erify the s	have personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check	the following, if applicat	ole:	
	I certify the information and has not chan		red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not chan	•	red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information for the year and h	-	ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina I	Brown 16		
Signa	ture	<u> </u>	Mez Date 2/25/11

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

PHONE:

FAX:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

(607) 731-0145

(607) 562-4001

WO#:

10114176

Work Order: 10114176

PAGE:

1 of 2

PO#:

PWS ID#

AF 77728

TEST REPORT

01-074

RECEIVED FOR LAB BY: SCP

DATE: 11/30/2010 11:10

Page 1 of 2

RECEIVED FOR LAB BY: SCP	DATE:	11/30/20 10 11:10			Pa	ige I of Z
SAMPLE: Pad Sand	a menter a televide el le tromene l'en le levide della lel lel lel levide della attenta proceso.	Lab ID: 10114176-001A	Compo	site		
SAMPLED BY: SG	Sample	Time: 11/29/2010 17:14	SLOQ			
<u>Test</u>	Result	Method	SLOG	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	< 103 mg/Kg	EPA 9071	103	12/07/10 14:30	12/07/10	
Sample Note: Analysis performed by	Microbac Laboratories,	IncErie Division				
SAMPLE: Pad Sand		Lab ID: 10114176-001B	Compo	site		
SAMPLED BY: SG	Sample	Time: 11/29/2010 17:14				
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	8.62 %	Moisture Calc.	0.01	11/30/10 9:40	12/01/10	NFM-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	11/30/10 14:10	11/30/10	IC-\$A
рН	8.62@22.7°C	EPA 9045C		11/30/10 8:00	11/30/10	NFM-SA
SAMPLE: Pad Sand		Lab ID: 10114176-001C	Compo	site		
SAMPLED BY: SG	Sample	e Time: 11/29/2010 17:14	SLOQ			
<u>Test</u>	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Sodium	< 84.9 mg/Kg	EPA 6010B	84.9	12/01/10 9:00	12/01/10	JRA-CV
Chloride	< 46.5 mg/Kg	EPA 300.0	46.5	11/30/10 14:49	12/01/10	HDP-CV
SAMPLE: TCLP Leachate of Pad Sand		Lab ID: 10114176-001E	Compo	site		
SAMPLED BY: SG	Sample	Time: 12/01/2010 7:00				
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	12/01/10 12:50	12/01/10	RMD-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	12/01/10 12:30	12/01/10	JRA-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/01/10 12:30	12/01/10	JRA-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/01/10 12:30	12/01/10	JRA-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV
	•					

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Due to matrix bias, spike recovery was outside acceptance limits

MANAGER	Carrie M. Davis	DATE:	12/9/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.

Sayre, PA 18840

Work Order: 10114176

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: S

Steve Gridley

COMPANY: ADDRESS:

Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10114176

PAGE:

2 of 2

PO#:

AF 77728

. •...

PWS ID#

PHONE: FAX:

(607) 731-0145

(607) 562-4001

TEST REPORT

-742 ID#

01-074

RECEIVED FOR LAB BY: SCP

DATE: 11/30/2010 11:10

Page 2 of 2

ECEIVED FOR LAB BT. SCP	UATI	C. 1170	0/2010 11.10			Г	age 2 01 2
Nickel - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/01/10 12:30	12/02/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	z	EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV
Silver - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/01/10 12:30	12/01/10	JRA-CV
Zinc - TCLP extracted	< 0.200 mg/L		EPA 6010B	0.200	12/01/10 12:30	12/01/10	JRA-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

Z Due to matrix bias, spike recovery was outside acceptance limits

	/ 1		``\
MANAGER	Carrie	M.	Davkus

DATE:

12/9/2010

CHAIN OF CUSTODY PAGE 1 OF 1 REPORT TO: Talisman / UEG ARE SPECIAL DETECTION LIMITS W/O#: 10114176 geowetlands@aol.com NEEDED: YES / 7NO REFRIGERATE SAMPLES RESULTS ARE BEING USED FOR: IF YES, PLEASE ATTACH NYDEC AFTER COLLECTION PADEP NYDOH DRINKING WATER SL SLUDGE IS A QC PACKAGE NEEDED? GROUND WATER SO SOIL CONTACT Steve Gridley SURFACE WATER ΗZ HAZARDOUS LANDFILL YES NO **TRANSPORT** OTHER WASTE WATER PERSONAL OTHER DEIONIZED WATER DI DISTILLED WATER 607-731-0145 TO IF YES, PLEASE ATTACH REQUIREMENTS SAMPLE TYPE. GRAB/COMPOSITE | F PRESERVATURE ADDED ON RECEIPT | LABORATORY HYDROCHLORIC ACID SODIUM HYDROXIDE FAX# SULFURIC ACID ASCORBIC ACID IN COOLER BILL TO: Talisman NITRIC ACID ACETIC ACID WITH ICE COMPOSITED ON REGERT SO 3 SODIUM SULFITE AMMONIUM CHLORIDE SODIUM THIOSULFATE ZN ZINC ACETATE TIME OF SAMPLING NONE MERCURIC CHLORIDE AF 77728 Sauple MATRIX DATE SAMPLED Please fill out all An incomplete chain of custody may delay the .. applicable areas processing of your sample(s). completely MPLER SIGNATURE / AFFILIATION SAMPLING POINT ANALYSIS TO BE PERFORMED LAB USE ONLY (PER CONTAINER) 11/29 1714 50 8-Sodium. Chloride In Guttings Pad Soud **TPH** рΗ 2 TCLP 8 RCRA Metals + Cu, Ni, Zn 3 A-TPH Free Liquids / % Moisture Free Liquidi 1. molisture Perform BTEX ONLY IF the TPH c-metals, Anions exceeds 100,000 mg/Kg HOUR TURNAROUND DAY TURNAROUND DELIVEREDBY TEMPERATURE UPONIREGE PT 18 2 CO. MARRIVAL ON LICENYAN TIME://00 RELINQUISHED BY RECEIVED BY: DATE: TIME: 11130110 RELINQUISHED BY DATE: TIME: RECEIVED BY: DATE: TIME:

RECEIVED BY:

DATE:

11 138 1 10

TIME:

Ad Graphics Printing 570-888-0685

RELINQUISHED BY:

DATE:

TIME:



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed o each at	r legib ttache	ly printed in the spa d sheet as Form 26	urately completed. All requinces provided. If additional sole, reference the item numineets needs to match the date	pace is necessary, ider ber and identify the o	ntify Da	DEP ate Receive	USE C		Notes	
General	l Refer	ence 287.54		A MARINE						
Date Pro	epared	d/Revised	February 11, 2011							
		SECTION	A. CLIENT (GENERATO	R OF THE WASTE) I	NFORM <i>A</i>	NOITA				
Compar	-									
		ergy USA Inc.								
	-	y, Name of Parent Co	ompany				Gener	ator II	D#	
		ergy Inc.		<u> </u>		N/A				
•	-	ling Address Line 1	•	Company Mailing Addr	ess Line 2					
50 Peni		i Place Iress Last Line – City	v State	7:n.i.4	Phon			Ex	4	
Warren	_	iress Last Line – City	y State PA	Zip+4 15086) 814-53	20	ΕX	L	
		ntact Last Name	First Name	13080 MI	(124)	Suffi				
Brown	iy Coi	itact Last Name	Dina	Wil		Juin	^			
Municip	ality		2,	County						
Warren				Allegheny						
Contact		e Ext	Contact Email Address							
$(724) 8^{-1}$	14-532	21	dybrown@talismanusa	.com						
Is the w	aste g	enerated at the Com	pany Mailing Address (noted	above)?			Yes		No	
If 'No', c			generation and storage. Was							
<u> </u>		well pad site locate	d at 554 Alba Mountain Road,	Canton Township, Bradf	ord County,	PA. The	waste	is tem	porarily	
stored o	nsite.									
Municip	ality	Canton	County Brad	ford	S	tate	PA			
		Garton	SECTION B. WAS				. , ,			
Resid	ual	Por	sidual Waste	IL DESCRIPTION	Unit	of	Τ	Tim	6	
Waste C			e Description	Amount	Į.	Measure		Frame		
804			te (Flow Back Sand)	17	☐ cu yd	☐ gal				
		Tracing Fluid Wasi			☐ lb			One	Time	
			1. GENERAL							
	pH Rai		6 to 9	(based on analyses or	knowledge)					
b. I	Physic	al State	Liquid Waste (EPA M							
			Solid (EPA Method 9	•						
			Gas (ambient temper							
c. I	Physic	al Appearance	Color Greyish black	< Od		ocarbon				
			Number of Solid or Liqu	id Phases of Separatio	n One		,			
			Describe each phase of	separation. <u>Sand</u>						
	0.000							sgress (carett)		
_	TL		2. CHEMICAL ANALY		in the	<u> </u>	V		No	
i	instruc	ctions, is attached.	emical characterization of th		in the		Yes		No	
b. A detailed description of the waste sampling method is attached.										
		•	·		The quality assurance/quality control procedures employed by the laboratory(ies) is Yes No attached.					
	The qu	iality assurance/qual	·		(ies) is		Yes		No	
	The quattach	iality assurance/qual ed.	·	oyed by the laboratory((ies) is		Yes Yes		No No	

		Process Description & So				
a.	A detailed description of the the waste, as specified in the		on control processes	producing 🛛 Y	es 🗌 No	
b.	A schematic of the manufactuas specified in the instruction		processes producing	g the waste, 🛛 🗡	es No	
C.	If portions of the information a confidentiality claim, as des			Yes N	lo 🛛 N/A	
	SECTION	N C. MANAGEMENT	OF RESIDUAL	WASTE	-	
-134		1. PROCESSING OR DISPO	AND THE RESIDENCE OF THE PROPERTY OF THE PROPE	· · · · · · · · · · · · · · · · · · ·		
The ar	ea below (ad.) will accommod			tional sheets if neces	ssary.	
a.	Solid waste permit number(s) 100361	for processing or disposal f	acility being utilized.			
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane				
	Address Line 1			·		
	Address City State ZIP	Kane	PA	16735		
<u></u>	Municipality	Kane	County Mck	Kean		
c.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931 E	nail Address mar	nderfeld@gmail.com	t	
d.	Volume of waste shipped to p 17	cu yd gal	lb ⊠ ton	(check one)		
a.	Solid waste permit number(s)	for processing or disposal fa	acility being utilized.			
b.	Facility Name					
	Address Line 1					
	Address Line 1					
	Address City State ZIP					
	Municipality		County			
c.	Facility Contact Name					
	Title					
	Phone	Eı	nail Address			
d.	Volume of waste shipped to p	· - · · · · · · · · · · · · · · · · · ·	· — ·			
		cu yd 📙 gal 📙	lb ton	(check one)		
41		2. BENEFICIA	L USE			
a.	Has the waste been approved	for beneficial use?			es 🛭 No	
	If "Yes", list the general permit number or approval number.					
b.	Volume of waste beneficially t				-	
		cu yd 🔲 gal 📋				

SECTION D. CERTIFICATION							
I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.							
Checl	k the following, if applical	ole:					
	I certify the information and has not chan	•	red in Section B-1, General Properties was supplied to the Department for the year				
	Form Submitted:		Form 26R				
			Other (specify)				
	Date Submitted:						
	I certify the information and has not chan		red in Section B-2, Chemical Analysis was supplied to the Department for the year				
	Form Submitted:		Form 26R				
			Other (specify)				
	Date Submitted:						
	I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year and has not changed.						
	Form Submitted:		Form 26R				
			Other (specify)				
	Date Submitted:						
Name	of Responsible Official		Title Environmental Specialist				
Dina l	Brown						
Signa	ture	9	Date $2/25/4$				

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

TEST REPORT

WO#:

10070634

PAGE:

1 of 3

PO#:

PWS ID#

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

Pad

RECEIVED FOR LAB BY: TJC DATE: 07/06/2010 13:04

Page 1 of 3

SAMPLE: Pit-Flowback Sand		Lab I	D: 10070634-001A	Compo	osite		
SAMPLED BY: LS	San	ple Tim	ne: 06/30/2010 7:00				
Toot	Popult		Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
<u>Test</u> Methanol	Result	N		4		Analysis End	
	< 4 mg/Kg		Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
isobutanol	< 4 mg/Kg	N	Alcohols by FID	4`	07/09/10 15:23	07/09/10	TTT-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Sodium	5440 mg/Kg-dry	L	EPA 6010B	91.8	07/08/10 7:00	07/09/10	JRA-CV
Bromine	<4.6 mg/kg	N	HACH 8167	0.05	07/07/10 10:14	07/07/10	SMH-CV
Styrene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	07/07/10 15:29	07/08/10	DN-CV
Chloride	12600 mg/Kg-dry		EPA 300.0	281	07/07/10 15:24	07/08/10	HDP-CV
Formaldehyde	1.9 mg/Kg-dry	N	NIOSH 3500	1.1	07/09/10 8:15	07/09/10	LTW-CV
Percent Moisture	11.1 %		SM2540G		07/07/10 9:00	07/08/10	NFM-SA
SAMPLE: Pit-Flowback Sand		Lab I	D: 10070634-001B	Compo	osite		*
SAMPLED BY: LS	Sam	ple Tim	e: 06/30/2010 7:00				
				<u>SLOQ</u>			
<u>Test</u>	Result		Method		Analysis Start	Analysis End	Analyst *
Moisture	11.1 %		Moisture Calc.	0.01	07/07/10 9:00	07/08/10	NFM-SA
Ammonia as N	11.1 mg/kg-dry	U	Lachat	1.1	07/08/10 10:42	07/08/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	07/07/10 8:20	07/07/10	IC-SA
pН	8.09@22.0°C		EPA 9045C		07/07/10 14:41	07/07/10	MED-SA
Phosphorus	39 mg/kg-dry		EPA 365.3	23	07/08/10 10:15	07/08/10	MED-SA

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range L
- Parameter is not NELAC certified Ν
- U Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	7/12/2010
---------	-----------------	-------	-----------

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10070634

PAGE: 2 of 3

PO#:

TEST REPORT

PWS ID#

PHONE: (607) 562-4000 FAX:

Pad

(607) 562-4001

RECEIVED FOR LAB BY: TJC	DATE:	07/06/2010 13:04			Ps	ige 2 of 3
					1 (.ge 2 01 3
SAMPLE: Pit-Flowback Sand	l	ab ID: 10070634-001C	Compo	site		
SAMPLED BY: LS	Sample	Time: 06/30/2010 7:00	01.00			
Test	Result	Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	
Sample Note: Analysis performed	by Summit Environmental T	echnologies, Inc.				
SAMPLE: Pit-Flowback Sand	L	ab ID: 10070634-001D	Compo	site		
SAMPLED BY: LS	Sample	Time: 06/30/2010 7:00				
- .	D "		<u>SLOQ</u>			
<u>Test</u>	<u>Result</u>	Method		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	10.1 mg/Kg DRY	EPA 9065	1.53	07/08/10 8:45	07/08/10	
Sample Note: Analysis performed	by QC Laboratories.					
Sample Note: Holding times for pr	eparation or analysis exceed	ied				
SAMPLE: Pit-Flowback Sand	L	ab ID: 10070634-001E	Compo	site		
SAMPLED BY: LS	Sample	Time: 06/30/2010 7:00				
			<u>SLOQ</u>			
<u>Test</u>	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	8830 mg/Kg	EPA 9071		07/07/10 0:00	07/07/10	
Sample Note: Analysis performed	by Microbac-Erie					
SAMPLE: TCLP Leachate of Pit-Flor	wback Sand	ab ID: 10070634-001G	Compo	site		
SAMPLED BY: LS	Sample	Time: 06/30/2010 7:00				
			SLOQ			

				<u>5000</u>			
<u>Test</u>	<u>Result</u>		<u>Method</u>		Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L		EPA 7470A	0.0008	07/08/10 11:00	07/09/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Barium - TCLP extracted	58.6 mg/L	L	EPA 6010B	10.00	07/08/10 11:45	07/09/10	JRA-CV
Cadmium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Chromium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled

Carrie M. Davis DATE: 7/12/2010 MANAGER

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10070634

Work Order: 10070634

PAGE:

3 of 3

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(607) 562-4000

(607) 562-4001

ECEIVED FOR LAB BY: TJC	DATE:	07/06/2010 13:04			P	age 3 of 3
Copper - TCLP extracted	0.712 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Zinc - TCLP extracted	0.282 mg/L	EPA 6010B	0.200	07/08/10 11:45	07/09/10	JRA-CV
Sample Note: The temperature of t	he extraction room exceede	d the range of 23 ± 2°C				

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled

Carrie M. Davis **MANAGER**

DATE:

7/12/2010



typed or le	gibly printed in the hed sheet as Fori	accurately completed. All spaces provided. If addition m 26R, reference the item ed sheets needs to match the	nal space is necessary, ide number and identify the	ntify Date Red	EP USE ONLY ceived & General Notes
General Re	ference 287.54				
Date Prepa	red/Revised	February 11, 2011			
	SECTIO	ON A. CLIENT (GENERA	ATOR OF THE WASTE) I	NFORMATIO	N
Company	lame .				
	Energy USA Inc.				
	iary, Name of Parer	nt Company			PA Generator ID#
	Energy Inc.				/A
	Mailing Address Lin	ne 1	Company Mailing Addr	ess Line 2	
50 Pennw	ood Place Address Last Line –	City	ate Zip+4	Phone	Ext
Warrenda		- City St	•	(724) 814-	
	Contact Last Name	First Name	MI		uffix
Brown	Jontact Last Hame	Dina		3.	MILIA
Municipali	v	Dilia	County		
Warrendal			Allegheny		
Contact Pl		xt Contact Email Addr			
(724) 814-	5321	dybrown@talisman	usa.com		
		Company Mailing Address (n	oted above)?		Yes 🛛 No
		aste generation and storage.			
		ocated at 3268 Rundell Creek	Road, Armenia Township, Br	adford County, PA	The waste is
temporarily	stored onsite.				
Municipali	y Armenia	County E	Bradford .	State	PA
	7 111101110		ASTE DESCRIPTION		. , ,
Residual		Residual Waste	AOTE BEGORII 1101	Unit of	Time
Waste Cod	e	Code Description	Amount	Measure	Frame
804		Waste (Flow Back Sand)	834		ıal
004	Tracing ridio v	,		☐ lb to	on 🔲 One Time
			RAL PROPERTIES		
	Range	6 <u>to 9</u>	(based on analyses or	knowledge)	
b. Phy	sical State		PA Method 9095)		
		Solid (EPA Meth	•		
	·······		nperature & pressure)		
c. Phy	sical Appearance	Color Greyish E			on
		Number of Solid or	Liquid Phases of Separatio	n One	
		Describe each phas	e of separation. <u>Sand</u>		
a Th	vaaiilla af a dataila		NALYSIS ATTACHMENTS	in the	√ Voc. □ No.
	ructions, is attache	ed chemical characterization ed.	of the waste, as described	in the	Yes No
		of the waste sampling metho	od is attached.		∑ Yes
c. The		quality control procedures e		(ies) is	Yes No
		rdous waste determination is	s attached.		Yes No
e. If a	policable a detailed	l explanation cupporting use	of generator knowledge in	Yes	No ⊠ N/A

2540-PM-BWM0347 Rev. 1/2011

2002000	van de la companya d	PROCESS DESCRIPTION & S	CHEMAIC ATTAC	·LIMEIA 12			SHIPS AND SHIPS AND SHIPS
a.	A detailed description of the r the waste, as specified in the		on control proce	sses producir	ng 🛚	Yes	No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, Yes No as specified in the instructions, is attached.						
C.	If portions of the information submitted are confidential, the substantiation for Yes No N/A a confidentiality claim, as described in the instructions, is attached.						
	SECTION	ON C. MANAGEMENT	OFRESIDU	AL WASTE	=		
		1. PROCESSING OR DISPO					
The ar	ea below (ad.) will accommod	ate the identification of two	facilities. Attach	additional sh	eets if nec	essary.	
а.	Solid waste permit number(s) 100361	for processing or disposal f	facility being utili	ized.			
b.	Facility Name	McKean County Landfill					
	Address Line 1	19 Ness Lane					
	Address Line 1						
	Address City State ZIP	Kane	PA	167	35		
	Municipality	Kane	County	McKean			
c.	Facility Contact Name	Mike Manderfeld					
	Title	General Manager					
	Phone	814-778-9931 E	mail Address	manderfeld(രിവനമി cc	٦m	
			illaii 7 aarooo	manachelae	gginan.oc	,,,,	
d.	Volume of waste shipped to p	rocessing or disposal facilit cu yd gal	y in the previous	year. (check			
d. a.		rocessing or disposal facilit cu yd gal	y in the previous	year. (check			
	834	rocessing or disposal facilit cu yd gal	y in the previous	year. (check			
a.	Solid waste permit number(s) Facility Name Address Line 1	rocessing or disposal facilit cu yd gal	y in the previous	year. (check			
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	rocessing or disposal facilit cu yd gal	y in the previous	year. (check			
a.	Solid waste permit number(s) Facility Name Address Line 1 Address City State ZIP	rocessing or disposal facilit cu yd gal	y in the previous lb ⊠ ton acility being utili	year. (check			
a.	Solid waste permit number(s) Facility Name Address Line 1 Address City State ZIP Municipality	rocessing or disposal facilit cu yd gal	y in the previous	year. (check			
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal facilit cu yd gal	y in the previous lb ⊠ ton acility being utili	year. (check			
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal facilit cu yd	y in the previous b	year. (check			
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal facilit cu yd	y in the previous lb ⊠ ton acility being utili	year. (check			
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal facilit cu yd	y in the previous b	year. (check	one)		
a. b	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal facilit cu yd	y in the previous b	year. (check	one)		
a. b	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal facilit cu yd	y in the previous b	year. (check	one)		
a. b	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal facilit cu yd	y in the previous b	year. (check	one)		No
a. b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p Has the waste been approved If "Yes", list the general permi	rocessing or disposal facilit cu yd	y in the previous b	year. (check	one)		No
a. b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal facilit cu yd	y in the previous b	year. (check	one)		No

			SECTION D. CERTIFICATION			
Repo obtain know	I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.					
Chec	k the following, if applicat	le:				
	I certify the information and has not chan	-	ired in Section B-1, General Properties was supplied to the Department for the year			
	Form Submitted:		Form 26R			
			Other (specify)			
	Date Submitted:					
	I certify the information and has not chan	-	ired in Section B-2, Chemical Analysis was supplied to the Department for the year			
	Form Submitted:		Form 26R			
			Other (specify)			
	Date Submitted:					
	I certify the information if for the year and h	-	ed in Section B-3, Process Description and Schematic, was supplied to the Department t changed.			
	Form Submitted:		Form 26R			
			Other (specify)			
	Date Submitted:					
Name	of Responsible Official		Title Environmental Specialist			
Dina	Brown					
Signa	ture		Date 2/25/4			

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10123074

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Dina Brown

COMPANY: ADDRESS:

Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10123074

PAGE:

1 of 1

PO#:

COMPLETIONS

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

TEST REPORT

PWS ID#

Harvest Holding

RECEIVED FOR LAB BY: CMS

DATE: 12/20/2010 11:58

Page 1 of 1

MPLE: Flowback Sand	L	ab ID: 10123074-001A	Grab			
SAMPLED BY: LS	Sample '	Time: 12/19/2010 16:00				
T4	Demille	li din stano at	SLOQ	Amahinin Otaut	Amotote Food	A +
Test	Result	Method	0.0000	Analysis Start	Analysis End	
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	12/20/10 11:30	12/21/10	KW-CV
Aluminum - TCLP extracted	0.827 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Antimony - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Barium - TCLP extracted	17.2 mg/L	EPA 6010B	10.00	12/21/10 11:30	12/21/10	GSR-CV
Beryllium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Boron - TCLP extracted	< 1.25 mg/L	EPA 6010B	1.25	12/21/10 11:30	12/21/10	G\$R-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	G\$R-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	19:1 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.687 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

* CV = Benchmark Analytics, Inc. Center Valley, PA; ŠA = Benchmark Analytics, Inc. Sayre, PA

Value above calibration range but within annually verified linear range

MANAGER	Carri M. Davis	DATE:	12/22/2010

CHAIN OF CUSTODY			-	• • • • • • • •		PAGE 1 OF	1
Talisman / UEG				:0		ARE SPECIAL DETECTION LIMITS	
geowetlands@aol.com							
Harvest Holding	REFRIGEF AFTER CC.		/D\	INIDON NID	IG USED FOR: FOR PADEP	NEEDED: YES / NO IF YES, PLEASE ATTACH IS A QC PACKAGE NEEDED)?
CONTACT - Din- Brown 724 814 530/	TRANS		GI SI W	W GROUND WATER SO SOIL W SURFACE WATER HZ HAZARDOUS LAND W WASTE WATER OTHER DEPONITED NATER DEPONAL OTHER	FILL Mostoller	YES NO	
724 514 532 / BILL TO: Talisman	LABOR/ IN COC WITH	ATORY DLER ICE	COMPOSIT	H HYDROCHLORIC ACID OH SODIUM HYDROXIDE S SULFURIC ACID AS ASCORBIC ACID N NITRIC ACID AC ACETIC ACID SO 3 SODIUM SULFITE NH4 AMMONIUM CHLORIDE Thio SODIUM THIOSULFATE ZN ZINC ACETATE		(
PO# COMPLETIONS PROJECT DESCRIPTION SAMPLER SIGNATURE / AFFILIATION	THE SAMPLED	SAMPLE MATRIX	SAMPLER NUTALS	An incomplete chain of custody may delay the processing of your sample(s). ANALYSIS TO BE PERFORMED	COMPOSITED ON RECE	Please fill out all applicable areas completely LAB USE ONLY	
CONTAINER SAMPLING POINT	v ,			ANALYSIS TO BE PERFORMED (PER CONTAINER)		LAB USE ONLY	
1 Flowback Sand	13/19 400	C	LS	Ignitability, Reactive Sulfide & Cyaride			
2		С		PCBs, Total Solids			
3		G		Total Volatile Solids			
4		С		Water Leaching Procedure: COD,			
5		С		Total Solids, Oil & Grease,			
6		С		TCUP metals only,			
7				per Dina Brown 12/2/10			
8							
9				24 HOUR TURNAROUND			
10		·		DAY TURNAROUND			
11							
DENVEREDBY				JEMRERA UREUPON REGER	100	90 ARRIVALION ICE	
RELINQUISHED BY:	Ď	ATE:	TIME:	RECEIVED BY:		DATE: TIME:	
RELINQUISHED BY:		2 1/91/ ATE:	TIME:	RECEIVED BY:	1007	DATE: TIME:	
RELINQUISHED BY:	Di	ATE:	TIME:	RECEIVED BY: NOW U. O. N.		DATE: 120/10 TIME:	

Ad Graphics Printing 570-888-0585



typed or l each atta	his form must be fully and accurately completed. All required information must be provided. If additional space is necessary, identify and accurately printed in the spaces provided. If additional space is necessary, identify and accurately ac						
General F	eference 287.54						
Date Prep	ared/Revised	Feb	ruary 11, 2011				
	SEC	TION A.	CLIENT (GENERATOR	R OF THE WASTE) II	NFORMAT	TION	
Company							
	Energy USA In						
	diary, Name of P	arent Compa	any			N/A	enerator ID#
	Energy Inc. Mailing Address	s Line 1		ompany Mailing Addre	es I ine 2	IN/A	
	ood Place	S Line 1	ŭ	ompany maming Addic	.33 Line L		
	Address Last Li	ine – City	State	Zip+4	Phone		Ext
Warrenda			PA	15086	(724) 8	314-5300	
	Contact Last Na	ame ,	First Name	Mi		Suffix	
Brown Municipal	·		Dina	County			
Warrenda	•			Allegheny			
Contact P		Ext	Contact Email Address	anegricity			
(724) 814			dybrown@talismanusa.c	com			
Is the was	te generated at		y Mailing Address (noted	above)?			es 🛛 No
			eration and storage. Wast				
		well pad site l	ocated at 909 Newell Road,	Canton Township, Brad	lford County,	PA. The	waste is
temporarii	stored onsite.						
Municipal	i ty Cant	ton	County Bradfo	ord	Sta	ite	PA
•			SECTION B. WAST				
Residua	I I	AND THE RESIDENCE OF THE PROPERTY OF THE PROPE	al Waste		Unit o	f	Time
Waste Co	de	Code De	escription	Amount	Measu		Frame
804	Fracing Flu	uid Waste (F	low Back Sand)	225	☐ cu yd	☐ gal	
		•	1. GENERAL P	PODEDTIES	☐ lb	⊠ ton	One Time
a. pŀ	Range	6	- 2 L3 2 Capping C - 10 Capping Committee Capping Capping Committee Capping Capping Committee Capping	(based on analyses or I	(nowledge)		
	ysical State		Liquid Waste (EPA Me	<u> </u>			
	•		Solid (EPA Method 90)	•			
			Gas (ambient tempera	ture & pressure)			
c. Ph	ysical Appearan	ice	Color Greyish Black	Odo	r Hydroc	arbon	
			Number of Solid or Liquid	d Phases of Separation	One		
			Describe each phase of s	eparation. <u>Sand</u>			
			e securities				
a. Th	o results of a do	tailed chemi	2. CHEMICAL ANALYS cal characterization of the	 Construction (200)—10 Contract — By Carl Management of the Carl Management of the Contract of the	n the	⊠ Y	es 🗆 No
	tructions, is atta		cai characterization of the	: waste, as described i	ii tiie		35 [] NO
			aste sampling method is a	attached.		X Y	es No
			control procedures employ		es) is	X Y	
	ached.						
			aste determination is atta			<u> </u>	
		ailed explana	ation supporting use of ge		Yes	N N	<u></u>

	3.	Process Description & Sc	HEMATIC ATTACH	MENTS		Harrista Bazz Aries
a.	A detailed description of the r the waste, as specified in the		on control process	ses producing	⊠ Yes	☐ No
b.	A schematic of the manufactu as specified in the instruction		processes produ	cing the waste,	⊠ Yes	☐ No
c.	If portions of the information a confidentiality claim, as des			for Yes	☐ No	⊠ N/A
	SECTION	N.C. MANAGEMENT	OF RESIDUA	L WASTE		
		1. PROCESSING OR DISPO	SAL FACILITY(IES))-		
The ar	ea below (ad.) will accommod	ate the identification of two f	acilities. Attach a	dditional sheets	if necessary.	
а.	Solid waste permit number(s) 100361	for processing or disposal fa	acility being utilize	ed.		
b.	Facility Name	McKean County Landfill			****	
	Address Line 1	19 Ness Lane				
	Address Line 1					
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County [McKean		
c.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931 Er	nail Address	manderfeld@gm	ail.com	
d.	Volume of waste shipped to p		in the previous y	rear. (check one)		
a.	Solid waste permit number(s)	for processing or disposal fa	acility being utilize	ed.		
b.	Facility Name					
	Address Line 1					
	Address Line 1					
	Address City State ZIP					
	Municipality		County			
C.	Facility Contact Name					
	Title					
	Phone		nail Address			
d.	Volume of waste shipped to p	rocessing or disposal facility cu yd gal	in the previous y lb	rear. (check one)		
		2. Beneficia	LJUSE			
a.	Has the waste been approved	for beneficial use?	and the second s		Yes	⊠ No
	If "Yes", list the general permi	t number or approval numbe	r.			
b.	Volume of waste beneficially u					
	0	cu yd 🔲 gal 🔲	lb ton	(check one)		

			SECTION D. CERTIFICATION
Repor obtain knowl	t and all attached docu ling the information, I v edge. I understand that	ments erify the s	have personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check	the following, if applicat	ole:	
	I certify the information and has not chan	-	red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	certify the information and has not chan	_	red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information if for the year and h	•	ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina E	Brown		
Signat	ture Ah		Date $2/25/1$

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10123074

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Dina Brown

ADDRESS:

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10123074

PAGE:

1 of 1

PO#:

COMPLETIONS

PWS ID#

PHONE: FAX:

(607) 562-4000

(607) 562-4001

TEST REPORT

Harvest Holding

RECEIVED FOR LAB BY: CMS

DATE: 12/20/2010 11:58

Page 1 of 1

SAMPLE: Flowback Sand		Lab ID	10123074-001A	Grab			
SAMPLED BY: LS	Sam	ple Time:	12/19/2010 16:00				
Test	Result		Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L		EPA 7470A	0.0008	12/20/10 11:30	12/21/10	KW-CV
Aluminum - TCLP extracted	0.827 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Antimony - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Arsenic - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Barium - TCLP extracted	17.2 mg/L	L	EPA 6010B	10.00	12/21/10 11:30	12/21/10	GSR-CV
Beryllium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Boron - TCLP extracted	< 1.25 mg/L		EPA 6010B	1.25	12/21/10 11:30	12/21/10	G\$R-CV
Cadmium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	G\$R-CV
Chromium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L		EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	19:1 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.687 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L		EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L		EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

Value above calibration range but within annually verified linear range

	Λ		
MANAGER	Carrie M. Davis	DATE: 12/22/2010	

CHAIN OF CUSTODY		PAGE 1 OF 1
Talisman / UEG	;0	ARE SPECIAL DETECTION LIMITS
geowetlands@aol.com		
	REFRIGEF W/O#: 10123074 RESULTS ARE BEING USED FOR:	NEEDED: □YES / ☑NO
Harvest Holding	AFTER CC. /DW DRINKING WATER SL SLUDGE NYDOH NYDEC PADEL	IF YES, PLEASE ATTACH
CONTACT -: C : How	GW GROUND WATER SO SOIL SW SURFACE WATER HZ HAZARDOUS LANDFILL Mostoller	[
Dina Brown 724 814 530/	TRANSPORT / WW WASTE WATER OTHER	
724 814 530/	TO DE DEIONIZED WATER DI DISTILLED WATER PERSONAL OTHER LABORATORY / H HYDROCHLORIC ACID OH SODIUM HYDROXIDE	IF YES, PLEASE ATTACH REQUIREMENTS
724 \$14 53 2 / BILL TO: Talisman	IN COOLER S SULFURIC ACID AS ASCORBIC ACID N NITRIC ACID AC ACETIC ACID	
BILL 10: Talisman	WITH ICE SO ₃ SODIUM SULFITE NH, AMMONIUM CHLORIDE	1 5 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
PO# COMPLETIONS	Thio SODIUM THIOSULFATE ZN ZINC ACETATE NONE Hg MERCURIC CHLORIDE	
PROJECT DESCRIPTION	An incomplete chain of custody may delay the	Please fill out all applicable areas
SAMPLER SIGNATURE / AFFILIATION	processing of your sample(s).	completely
CONTAINER SAMPLING POINT	LABORATORY IN COOLER WITH ICE H HYDROCHLORIC ACID OH SODIUM HYDROXIDE S SULFURIC ACID AS ASCORBIC ACID N NITRIC ACID AC ACETIC ACID SO SODIUM SULFITE NH4 AMMONIUM CHLORIDE Thio SODIUM THIOSULFATE ZN ZINC ACETATE NONE Hg MERCURIC CHLORIDE An incomplete chain of custody may delay the processing of your sample(s). ANALYSIS TO BE PERFORMED (PER CONTAINER)	Please fill out all applicable areas completely LAB USE ONLY
SAUS EINO I ON I	(PER CONTAINER)	LAB USE ONLY
1 Flowback Sand	12/1 4 C (s Ignitability, Reactive Sulfide & Cyande	
2	C PCBs, Total Solids	
3	G Total Volatile Solids	
4	C Water Leaching Procedure: COD,	
5	C Total Solids, Oil & Grease,	
6	C TCUP metals only	
7	per Dina Brown 12/2/10	
8		
9	24 HOUR TURNAROUND	
10	DAY TURNAROUND	200
11		
_AS USE ONLY DEBUMERED BY	TEMPERATÜRE DE ON REGELET.	
PERMENEURI DE LA COMPANION DE		E O SANKIVAL UNICE YUN
RELINQUISHED BY:	DATE: TIME: RECEIVED BY:	DATE: , TIME:
RELINQUISHED BY:	12 1/9 1/0 7.3 0 gu RECEIVED BY:	DATE: TIME:
		1 1
RELINQUISHED BY:	DATE: , TIME: RECEIVED BY: " Queue Voca-	から2010 TIME:
		Ad Graphics Printing 570-888-0585



						USE ONLY yed & General Notes
Genera	al Refer	rence 287.54				
Date P	repared	d/Revised	February 11, 2011			
		SECTION	A. CLIENT (GENERATO	R OF THE WASTE) I	NFORMATION	
Compa	any Nar	ne		e general de la companya de la comp		
		ergy USA Inc.				
		y, Name of Parent C	ompany			Generator ID#
		ergy Inc.		O A-I-I	N/A	
		ling Address Line 1 d Place		Company Mailing Addre	ss Line 2	
		dress Last Line – Ci	ity State	Zip+4	Phone	Ext
Warre		aress Last Line O	PA	15086	(724) 814-53	
		ntact Last Name	First Name	MI	Suff	
Brown			Dina		-	
Munici				County		
Warre				Allegheny		
	t Phon		Contact Email Address			
	314-53		dybrown@talismanusa npany Mailing Address (noted			Yes 🛛 No
			e generation and storage. Wa		لـــا Stural das completion	
11 110			ated at 13766 Route 14, Canton			
onsite.						
		•		, ,	0	
Munici	pality	Canton	County Brad		State	PA
			SECTION B. WAS	TE DESCRIPTION		
Resid Waste			esidual Waste de Description	Amount	Unit of Measure	Time Frame
	Code				cu yd gal	Frame
804		Fracing Fluid Wa	ste (Flow Back Sand)	681	☐ Ib ☐ ton	☐ One Time
			1. GENERAL	PROPERTIES		
а	pH Ra		8.09 to	(based on analyses or k	nowledge)	
b.	Physic	cal State	Liquid Waste (EPA N	,		
			Solid (EPA Method 9	•		
	<u> </u>		Gas (ambient temper	<u></u>		
C.	Physic	cal Appearance	Color Greyish Blac			
			Number of Solid or Liqu	· ·	One	
			Describe each phase of	separation. Sand		
			2. CHEMICAL ANAL	YSIS ATTACHMENTS		100
a.	The re		chemical characterization of the		n the	Yes No
		ctions, is attached.				
b.	instruc	ctions, is attached. iled description of t	the waste sampling method is	attached.		Yes No
b. c.	instrud A deta	iled description of to ality assurance/qua	the waste sampling method is ality control procedures empl		Para Para Para Para Para Para Para Para	Yes No
	A deta The quattach	iled description of t uality assurance/qua ed.		oyed by the laboratory(i	Para Para Para Para Para Para Para Para	

2540-PM-BWM0347 Rev. 1/2011

		PROCESS DESCRIPTION & S			· Care Sci e 1	
a.	A detailed description of the the waste, as specified in the		on control proces	sses producing	⊠ Yes	☐ No
b.	A schematic of the manufacture as specified in the instruction		processes produ	ucing the waste,	⊠ Yes	☐ No
C.	If portions of the information a confidentiality claim, as des			for Yes	☐ No	⊠ N/A
	SECTION	ONIC. MANAGEMENT	OF RESIDUA	AL WASTE		
		1. PROCESSING OR DISPO	SAL FACILITY(IES	s)		1.7
The ar	rea below (ad.) will accommod				if necessary	'-
a.	Solid waste permit number(s) 100361	for processing or disposal f	acility being utiliz	zed.		
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane				
	Address Line 1				 	
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County	McKean		
C.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931 E	mail Address	manderfeld@gm	ail.com	
d.	Volume of waste shipped to p	cu yd 🔲 gal 📗	lb ⊠ ton	(check one)		
a.	Solid waste permit number(s)	for processing or disposal f	acility being utiliz	ed.		
b.	Facility Name					
	Address Line 1					
	Address Line 1					
	Address City State ZIP					
	Municipality		County			
C.	Facility Contact Name		·			
	Title		!! A .I.I			
	Phone		mail Address			
d.	Volume of waste shipped to p	rocessing or disposal facility cu yd	/ in the previous ton	year. (check one)		
		2. BENEFICIA	L≿USE			
	The second secon		and the property of the last of the party of the last	anne ann an 1904 an Aireann an 1905 an Aireann an Aireann an Aireann an Aireann an Aireann an Aireann an Airean Aireann an Aireann an		
a.	Has the waste been approved	tor beneticial use?			Yes Yes ✓	⊠ No
a.	Has the waste been approved If "Yes", list the general perm		er.		∐ Yes	⊠ No
a. b.	• •	t number or approval numbe	er.		res	⊠ No

			SECTION D. CE	RTIFICAT	TION
Reportain obtain know	rt and all attached docu ning the information, I v ledge. I understand that	ments erify the s	and that based upon my that the submitted inform	inquiry of ation is tru tion herein	iar with the information submitted in this Annual those individuals immediately responsible for ite, accurate and complete to the best of my is made subject to the penalties of 18 Pa. C.S. I imprisonment.
Chec	the following, if applicab	le:			
	I certify the information and has not chan	-	red in Section B-1, Genera	al Properties	s was supplied to the Department for the year
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
	I certify the information and has not change	-	red in Section B-2, Chemi	cal Analysis	s was supplied to the Department for the year
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
	I certify the information if for the year and h	•	· · · · · · · · · · · · · · · · · · ·	Description	and Schematic, was supplied to the Department
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
Name	of Responsible Official			Title	Environmental Specialist
Dina l	Brown _			_	,
Signa	ture	$\frac{\overline{c}}{\overline{c}}$	ylen	Date	2/25/4

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

D(

PAGE: 1 of 3

10070634

PO#:

WO#:

PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

Pad

RECEIVED FOR LAB BY: TJC DATE: 07/06/2010 13:04 Page 1 of 3

SAMPLE: Pit-Flowback Sand		Lab I	D: 10070634-001A	Compo	site		
SAMPLED BY: LS	San	nple Tim	e: 06/30/2010 7:00	01.00			
Test	Result		Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4 `	07/09/10 15:23	07/09/10	TTT-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Sodium	5440 mg/Kg-dry	L	EPA 6010B	91.8	07/08/10 7:00	07/09/10	JRA-CV
Bromine	<4.6 mg/kg	N	HACH 8167	0.05	07/07/10 10:14	07/07/10	SMH-CV
Styrene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	07/07/10 15:29	07/08/10	DN-CV
Chloride	12600 mg/Kg-dry		EPA 300.0	281	07/07/10 15:24	07/08/10	HDP-CV
Formaldehyde	1.9 mg/Kg-dry	N	NIOSH 3500	1.1	07/09/10 8:15	07/09/10	LTW-CV
Percent Moisture	11.1 %		SM2540G		07/07/10 9:00	07/08/10	NFM-SA
SAMPLE: Pit-Flowback Sand	200	Lab II	D: 10070634-001B	Compo	site		
SAMPLED BY: LS	San	ple Tim	e: 06/30/2010 7:00				
Tool	Dogult		Mathad	<u>SLOQ</u>	Analysis Start	Analysis End	Amalust *
<u>Test</u> Moisture	<u>Result</u> 11.1 %		<u>Method</u> Moisture Calc.	0.01	Analysis Start 07/07/10 9:00	Analysis End 07/08/10	Analyst *
		U					NFM-SA
Ammonia as N	11.1 mg/kg-dry	U	Lachat	1.1	07/08/10 10:42	07/08/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	07/07/10 8:20	07/07/10	IC-SA
рH	8.09@22.0°C		EPA 9045C		07/07/10 14:41	07/07/10	MED-SA
Phosphorus	39 mg/kg-dry		EPA 365.3	23	07/08/10 10:15	07/08/10	MED-SA

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

MANAGER	Carri M. Darks	DATE:	7/12/2010
	State of the contract of the c		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10070634

PAGE:

2 of 3

PO#:

PWS ID#

TEST REPORT

PHONE:

(607) 562-4000

FAX: (607) 562-4001

DATE:	07/06/2010 13:04			Pa	age 2 of 3
		·	site		
Result < 10.00 mg/Kg < 10.00 mg/Kg	Method Glycols by 8015 Glycols by 8015	10.00 10.00	Analysis Start 07/08/10 0:00 07/08/10 0:00	Analysis End 07/08/10 07/08/10	Analyst *
Sample Result 10.1 mg/Kg DRY by QC Laboratories.	Lab ID: 10070634-001D e Time: 06/30/2010 7:00 Method EPA 9065	Compo SLOQ 1.53	<u>Analysis Start</u> 07/08/10 8:45	<u>Analysis End</u> 07/08/10	Analyst *
Sample <u>Result</u> 8830 mg/Kg		Compo SLOQ	Analysis Start 07/07/10 0:00	<u>Analysis End</u> 07/07/10	Analyst *
roadit dana		SLOQ 0.0008 0.500 10.00 0.100 0.500	Analysis Start 07/08/10 11:00 07/08/10 11:45 07/08/10 11:45 07/08/10 11:45 07/08/10 11:45	Analysis End 07/09/10 07/09/10 07/09/10 07/09/10 07/09/10	Analyst * KW-CV JRA-CV JRA-CV JRA-CV JRA-CV
	Result < 10.00 mg/Kg < 10.00 mg/Kg by Summit Environmental T Sample Result 10.1 mg/Kg DRY by QC Laboratories. sparation or analysis exceed Result 8830 mg/Kg by Microbac-Erie wback Sand Result < 0.0008 mg/L < 0.500 mg/L 58.6 mg/L < 0.100 mg/L	< 10.00 mg/Kg	Lab ID: 10070634-001C Composition	Lab ID: 10070634-001C Composite	Lab ID: 10070634-001C Composite Sample Time: 06/30/2010 7:00 SLOQ Analysis Start Analysis End < 10.00 mg/Kg Glycols by 8015 10.00 07/08/10 0:00 07/08/10 < 10.00 mg/Kg Glycols by 8015 10.00 07/08/10 0:00 07/08/10 < 10.00 mg/Kg Glycols by 8015 10.00 07/08/10 0:00 07/08/10 <p>by Summit Environmental Technologies, Inc. Lab ID: 10070634-001D Composite Sample Time: 06/30/2010 7:00 SLOQ Analysis Start Analysis End 07/08/10 8:45 07/08/10 10.1 mg/Kg DRY EPA 9065 1.53 07/08/10 8:45 07/08/10 by QC Laboratories. graration or analysis exceeded Lab ID: 10070634-001E Composite Sample Time: 06/30/2010 7:00 SLOQ Analysis Start Analysis End 07/07/10 0:00 07/07/10 Result Method Analysis Start Malysis End 07/07/10 0:00 07/07/10 Tomposite SLOQ Analysis Start O7/07/10 0:00 07/07/10 Result Method Analysis Start Analysis End O7/07/10 0:00 07/07/10 SLOQ Result Method Analysis Start Analysis End O7/07/10 0:00 O7/09/10 Composite SLOQ Analysis Start Analysis End O7/07/10 0:00 O7/07/10 SLOQ Result Method Analysis Start Analysis End O7/07/10 0:00 O7/09/10 Composite SLOQ Analysis Start Analysis End O7/07/10 0:00 O7/07/10 SLOQ Result Method Analysis Start Analysis End O7/07/10 Composite SLOQ Analysis Start Analysis End O7/09/10 Composite SLOQ Analysis Start Analysis End O7/07/10 Composite SLOQ Analysis Start Analysis End O7/07/10 SLOQ Analysis Start Analysis End O7/07/10 Composite O7/07/10 O7/09/10 SLOQ Analysis Start Analysis End O7/07/10 Composite O7/07/10 O7/09/10 Composite O7/07/10 O7/09/10 SLOQ Analysis Start Analysis End O7/07/10 </p>

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled U

Carrie M. Davis MANAGER

DATE:

7/12/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10070634

PAGE:

3 of 3

PO#:

PO#:

PWS ID#

PHONE:

FAX:

ADDRESS:

(607) 562-4000

(607) 562-4001

TEST REPORT

EIVED FOR LAB BY: TJC	DATE:	07/06/2010 13:04			P	age 3 of 3
Copper - TCLP extracted	0.712 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-C\
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-C\
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-C\
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-C\
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-C\
Zinc - TCLP extracted	0.282 mg/L	EPA 6010B	0.200	07/08/10 11:45	07/09/10	JRA-C\

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

	/ /			¬ .
MANAGER	Carr	,	M.	Javis
		ч		

DATE:

7/12/2010



Section A Clentral (Generator of the waste) Section A Clentral (Genera	typed or le	gibly printed in the spaces hed sheet as Form 26R,	ately completed. All requi is provided. If additional sp reference the item numb its needs to match the date	ace is necessary, ider er and identify the o	ntify Da	30000001111111111111111111111111111111	REAL PROPERTY.	NLY State of the s
SECTION A. CLIENT® GENERATOR OF THE WASTE) INFORMATION Company Name Talisman Energy USA Inc. If a Subsidiary, Name of Parent Company Talisman Energy Inc. Tompany Mailing Address Line 1 So Pennwood Place Company Mailing Address Line 2 So Pennwood Place Company Address Last Line - City Varrendale PA 15086 Company Mailing Address Line 2 So Pennwood Place Company Mailing Address Line 2 So Pennwood Place Ext Varrendale PA 15086 Company Contact Last Name Brown Dina County Warrendale Contact Phone Ext Contact Email Address Allegheny Contact Phone Ext Contact Phone Ext Contact Email Address Allegheny Contact Phone Ext Contact Phone Ext Contact Email Address Allegheny Contact Phone Ext Contact	General R	ference 287.54						
Company Name Talisman Energy USA Inc. If a Subsidiary, Name of Parent Company Talisman Energy Inc. If a Subsidiary, Name of Parent Company If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary, Name of Parent Company Mailing Address If a Subsidiary If a Subsid	Date Prepa	red/Revised Fe	bruary 11, 2011					
Company Name Talisman Energy USA Inc. If a Subsidiary, Name of Parent Company Talisman Energy Inc. If a Subsidiary, Name of Parent Company If a Subsidiary, Name of Parent Company If a Subsidiary, Name of Parent Company If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address Line 2 If a Subsidiary, Name of Parent Company Mailing Address (724) 814-5300 If a Suffix If a Subsidiary If a Suffix If a Subsidiary If a Suffix If a Subsidiary If a Subsidiary If a Suffix If a Subsidiary If a Subsidiary If a Suffix If a Subsidiary If a Suffix If a Subsidiary If a Su		SECTION A.	CLIENT (GENERATOR	R OF THE WASTE) I	NFORMA	TION		
Fa Subsidiary, Name of Parent Company N/A	Company		the state of the s		(1990) 4 - (3			
Talisman Energy Inc. Company Mailing Address Line 1 Company Mailing Address Line 2 Company Address Last Line - City State Zip+4 Phone Ext Warrendale PA 15086 (724) 814-5300 Company Contact Last Name Dina Company Contact Last Name Dina Municipality Warrendale Residual Waste Gober Fracing Fluid Waste (Flow Back Sand) SECTION B. WASTE DESCRIPTION Residual Waste (Flow Back Sand) Fracing Fluid Waste (Flow Back Sand) Fracing Fluid Waste (Flow Back Sand) Sosia (EPA Method 9095) S								
Company Mailing Address Line 1 Company Mailing Address Line 2 S0 Pennwood Place			pany				Genera	tor ID#
State Stat				30 11 2 1		N/A		
State Zip+4			C	ompany Mailing Addre	ess Line 2			
Warrendale			State	7in+4	Phone	<u> </u>		Evt
Company Contact Last Name First Name Dina County							0	LXI
Brown Dina Municipality County Allegheny					(121)			
Warrendale Ext Contact Email Address Contact Email E								
Contact Phone	Municipali	у		County				
C724) 814-5321 dybrown@talismanusa.com Ste waste generated at the Company Mailing Address (noted above)? Yes No No No No No No No N				Allegheny				
Is the waste generated at the Company Mailing Address (noted above)? If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the Col-14) R well pad site located at 2509 Fallbrook Road, Armenia Township, Bradford County, PA. The waste is temporarily stored onsite. Municipality Armenia	••••••							
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-014) R well pad site located at 2509 Fallbrook Road, Armenia Township, Bradford County, PA. The waste is temporarily stored onsite. Municipality Armenia County Bradford State PA							\/	N7 N
Municipality					atural aga ag			
Municipality								
Municipality			2000 Talibrook Road, Affile	ilia Township, Diadiora	County, 17t.	THE WAS	10 10 10	трогатту
Residual Waste Code								
Residual Waste Code Code Description	Municipali	y Armenia				tate	PA	
Waste Code Code Description Amount Measure Frame 804 Fracing Fluid Waste (Flow Back Sand) 528 □ cu yd □ gal □ lb □			SECTION B. WAST	E DESCRIPTION	support and their continuous and an entire by adjust to			
Fracing Fluid Waste (Flow Back Sand) 528								
A. Physical State	Waste Cod	e Code D	Description	Amount				Frame
a. pH Range 7.60 to (based on analyses or knowledge) b. Physical State	804	Fracing Fluid Waste (Flow Back Sand)	528			 	One Time
a. pH Range 7.60 to (based on analyses or knowledge) b. Physical State			1. GENERAL P	ROPERTIES	i	2 (01)		CIIC TIIIC
Solid (EPA Method 9095) Gas (ambient temperature & pressure) C. Physical Appearance Color Grayish Black Number of Solid or Liquid Phases of Separation Describe each phase of separation. CHEMICAL ANALYSIS ATTACHMENTS a. The results of a detailed chemical characterization of the waste, as described in the instructions, is attached. b. A detailed description of the waste sampling method is attached. C. The quality assurance/quality control procedures employed by the laboratory(ies) is Yes No attached. d. The results of the hazardous waste determination is attached. Solid (EPA Method 9095) Gas (ambient temperature & pressure) Odor Hydrocarbon One One Yes No No No No N/A	a. pH	Range 7.6			knowledge)			
Color Grayish Black Odor Number of Solid or Liquid Phases of Separation One Color Grayish Black Odor Number of Solid or Liquid Phases of Separation One Color Grayish Black Odor Hydrocarbon One Describe each phase of separation. Sand Color Grayish Black Odor Hydrocarbon One Color Hydrocarbon One	b. Ph	sical State	Liquid Waste (EPA Me	ethod 9095)				
Color Grayish Black Odor Hydrocarbon One Number of Solid or Liquid Phases of Separation One 2. CHEMICAL ANALYSIS ATTACHMENTS a. The results of a detailed chemical characterization of the waste, as described in the instructions, is attached. b. A detailed description of the waste sampling method is attached. C. The quality assurance/quality control procedures employed by the laboratory(ies) is Yes No attached. d. The results of the hazardous waste determination is attached. E. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A			Solid (EPA Method 90	95)				
Number of Solid or Liquid Phases of Separation Describe each phase of separation. Sand 2. CHEMICAL ANALYSIS ATTACHMENTS a. The results of a detailed chemical characterization of the waste, as described in the instructions, is attached. b. A detailed description of the waste sampling method is attached. C. The quality assurance/quality control procedures employed by the laboratory(ies) is attached. d. The results of the hazardous waste determination is attached. E. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A			Gas (ambient tempera	ture & pressure)				
Describe each phase of separation. Sand 2. CHEMICAL ANALYSIS ATTACHMENTS a. The results of a detailed chemical characterization of the waste, as described in the instructions, is attached. b. A detailed description of the waste sampling method is attached. C. The quality assurance/quality control procedures employed by the laboratory(ies) is Yes No attached. d. The results of the hazardous waste determination is attached. E. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A	c. Ph	sical Appearance	<u> </u>		,	carbon		
2. CHEMICAL ANALYSIS ATTACHMENTS a. The results of a detailed chemical characterization of the waste, as described in the instructions, is attached. b. A detailed description of the waste sampling method is attached. c. The quality assurance/quality control procedures employed by the laboratory(ies) is Yes No attached. d. The results of the hazardous waste determination is attached. e. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A			Number of Solid or Liquid	d Phases of Separation	n One			
a. The results of a detailed chemical characterization of the waste, as described in the instructions, is attached. b. A detailed description of the waste sampling method is attached. c. The quality assurance/quality control procedures employed by the laboratory(ies) is attached. d. The results of the hazardous waste determination is attached. e. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A			Describe each phase of s	eparation. <u>Sand</u>				
a. The results of a detailed chemical characterization of the waste, as described in the instructions, is attached. b. A detailed description of the waste sampling method is attached. c. The quality assurance/quality control procedures employed by the laboratory(ies) is attached. d. The results of the hazardous waste determination is attached. e. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A								
instructions, is attached. b. A detailed description of the waste sampling method is attached.	_ TL				a the		V	□ Ne
b. A detailed description of the waste sampling method is attached. C. The quality assurance/quality control procedures employed by the laboratory(ies) is attached. C. The quality assurance/quality control procedures employed by the laboratory(ies) is attached. C. The results of the hazardous waste determination is attached. C. The results of the hazardous waste determination is attached. C. Yes No No No N/A			ilcal characterization of the	e waste, as described	in the		res	☐ NO
attached. d. The results of the hazardous waste determination is attached. e. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A			vaste sampling method is a	attached.		\boxtimes	Yes	□ No
 d. The results of the hazardous waste determination is attached. e. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A 	c. The	quality assurance/quality			ies) is		Yes	☐ No
e. If applicable, a detailed explanation supporting use of generator knowledge in Yes No N/A								
	d. The							
nou or actual cholineal analysis is attached.								
e. If applicable, a detailed explanation supporting use of generator knowledge in Yes No	atta	ched.	control procedures employ	yed by the laboratory(163/13			
DED OF ACTUAL CHEROCAL ARRIVAIS IS ARRICHED.								

3. Process Description & Schematic Attachments										
a.	A detailed description of the the waste, as specified in the	nanufacturing and/or pollution instructions, is attached.	control proces	ses producing	⊠ Yes	☐ No				
b.	A schematic of the manufactuas specified in the instruction	ring and/or pollution control p s, is attached.	rocesses produ	icing the waste,	Yes	No				
C.		submitted are confidential, the cribed in the instructions, is at		for Yes	☐ No	⊠ N/A				
SECTION C. MANAGEMENT OF RESIDUAL WASTE										
1. PROCESSING OR DISPOSAL FACILITY(IES)										
The ar	ea below (ad.) will accommod	ate the identification of two fac	ilities. Attach a	additional sheets	if necessary	7.				
a.	100361	for processing or disposal fac	ility being utiliz	ed.						
b.	Facility Name	McKean County Landfill								
	Address Line 1	19 Ness Lane								
	Address Line 1									
	Address City State ZIP	Kane	PA	16735						
	Municipality	Kane	County	McKean						
c.	Facility Contact Name	Mike Manderfeld								
	Title	General Manager								
	Phone	814-778-9931 Ema	ail Address	manderfeld@gm	iail.com					
d. Volume of waste shipped to processing or disposal facility in the previous year. 528										
d.	528	cu yd gal lb	n the previous y	year. (check one))					
d. a.	528		n the previous y	year. (check one))					
	528	cu yd gal lb	n the previous y	year. (check one))					
a.	528	cu yd gal lb	n the previous y	year. (check one))					
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	cu yd gal lb	n the previous y	year. (check one))					
a.	Solid waste permit number(s) Facility Name Address Line 1 Address City State ZIP	cu yd gal lb	n the previous y	year. (check one))					
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	cu yd gal lb	n the previous y	year. (check one))					
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	cu yd gal lb	n the previous y	year. (check one)						
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	for processing or disposal fac	the previous y ton ility being utiliz	year. (check one)						
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal lb	the previous y ton ility being utiliz County	year. (check one)						
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	for processing or disposal fac	the previous y ton ility being utiliz County all Address	year. (check one)						
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd	the previous y ton the previous y ton county dil Address the previous y ton	year. (check one)						
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd	the previous y ton the previous y ton county dil Address the previous y ton	year. (check one)		No				
a. b. c. d.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd	the previous y ton the previous y ton dility being utiliz County All Address the previous y ton USE	year. (check one)		No No				
a. b. c. d.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd	the previous you ton illity being utilized. County all Address the previous you ton USE	year. (check one)) Yes	No				

			SECTION D.	CERTIFICAT	TION
Reportain know	rt and all attached documents	ments erify the s	and that based upo that the submitted in ubmission of false int	n my inquiry of nformation is tru formation herein	ar with the information submitted in this Annual those individuals immediately responsible for ite, accurate and complete to the best of my is made subject to the penalties of 18 Pa. C.S. I imprisonment.
Checl	the following, if applicab	le:			
	I certify the information and has not change		red in Section B-1, G	eneral Properties	s was supplied to the Department for the year
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
	I certify the information and has not change	-	red in Section B-2, C	hemical Analysis	s was supplied to the Department for the year
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
	I certify the information r for the year and h			cess Description	and Schematic, was supplied to the Department
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
Name	of Responsible Official			Title	Environmental Specialist
Dina I	Brown		/		
Signa	ture	9	Us-	Date	2/25/4

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030496

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Pad Frac

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr ADDRESS:

Horseheads, NY 14845

WO#:

10030496

PAGE:

1 of 4

PO#:

PWS ID#

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

							age 1 of 4
SAMPLE: FB Sand-KL-1	_		D: 10030496-001A	Compo	osite		
SAMPLED BY: SG	Sar	nple Tim	e: 03/01/2010 11:20	SLOQ			
<u>Test</u>	Result		Method	<u> </u>	Analysis Start	Analysis End	Analyst *
Bromine	<4.6 mg/kg	K	HACH 8167	0.05	03/12/10 13:20	03/12/10	TLB-CV
Total Petroleum Hydrocarbons	1800 mg/K g		EPA 1664A	170	03/16/10 13:30	03/17/10	DTG-CV
SAMPLE: FB Sand-KL-1		Lab li	D: 10030496-001B	Compo	osite		
SAMPLED BY: SG	Sar	nple Time	e: 03/01/2010 11:20				
Tool	Deput		a dada a d	SLOQ	A t i C t t	A 4 1 T 4	A l 4
<u>Test</u> Moisture	<u>Result</u> 5.95 %		<u>Method</u> Moisture Calc.	0.01	Analysis Start 03/09/10 12:30	Analysis End	
Ammonia as N	·	U				03/10/10	NFM-SA
	< 100 mg/kg	J	Lachat	100	03/04/10 12:07	03/04/10	KAL-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	03/11/10 11:00	03/11/10	IC-SA
pH	7.60@23.9°C		EPA 9045C		03/10/10 16:00	03/10/10	NFM-SA
Phosphorus	< 250 mg/kg		EPA 365.3	250	03/16/10 11:04	03/16/10	JP-SA
% Solids	94.05 % Wght.	V-1112-0-1	SM2540B	0.10	03/09/10 12:30	03/10/10	NFM-SA
SAMPLE: FB Sand-KL-1		Lab II	D: 10030496-001C	Compo	site		
SAMPLED BY: \$G	San	nple Time	e: 03/01/2010 11:20				
Toot	Daguil		1 dail	SLOQ	A 1 2 - 0/- 4		
<u>Test</u> 1,1-Dichloroethene	Result		Method EDA 8969D	0.040	Analysis Start	Analysis End	Analyst *
Methylene chloride	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
•	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
2-Butanone	< 0.200 mg/Kg		EPA 8260B	0.200	03/08/10 14:09	03/09/10	DN-CV
trans-1,2-Dichloroethene	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,1-Dichloroethane	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
cls-1,2-Dichloroethene	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Chloroform	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,1,1-Trichloroethane	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-ÇV
Carbon tetrachloride	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Ammonia sample not distilled

	//		
MANAGER	Carrie M. Davis	DATE:	3/18/2010
	9000 111		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030496

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

TEST REPORT

WO#:

10030496

2 of 4

PAGE:

PO#:

PWS ID#

PHONE: (607) 731-0145 (607) 562-4001 FAX:

Pad Frac			<u> </u>				
CEIVED FOR LAB BY: DLM2	DATE: 0	3/03/2010 9:50	Page 2 of 4				
Benzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,2-Dichloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Trichloroethene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,2-Dichloropropane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Dibromomethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Bromodichloromethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
cis-1,3-Dichloropropene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Toluene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
4-Methyl-2-pentanone (MIBK)	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
trans-1,3-Dichloropropene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,1,2-Trichloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Tetrachloroethene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Dibromochloromethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,2-Dibromoethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Chlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,1,1,2-Tetrachloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Ethylbenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
m,p-Xylene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
o-Xylene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Xylenes, Total	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
Bromoform	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,2,3-Trichloropropane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,3-Dichlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,4-Dichlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	
1,2-Dichlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV	

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Ammonia sample not distilled

MANAGER Carri M. Davis	DATE:	3/18/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030496

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

TEST REPORT

WO#:

10030496

PAGE:

PWS ID#

3 of 4

PO#:

(607) 731-0145 (607) 562-4001

Pad Frac

PHONE:

FAX:

DECEIVED EOD I AD BY: DI MO DATE: 03/03/2010 0:50 Dogg 2 of 4

RECEIVED FOR LAB BY: DLM2	DATE:	03/03/2010 9:50			Pa	age 3 of 4
SAMPLE: FB Sand-KL-1		Lab ID: 10030496-001D	Compo	osite		
SAMPLED BY: SG	Sampl	e Time: 03/01/2010 11:20	CI 00			
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Ethanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Isopropanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
t-Butanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
n-Propanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Isobutanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
n-Butanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Formaldehyde	< 1.0 mg/Kg	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-CV
SAMPLE: FB Sand-KL-1		Lab ID: 10030496-001E	Compo	osite		
SAMPLED BY: SG	Sampl	e Time: 03/01/2010 11:20				
T	D #		SLOQ			
Test	Result	Method		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10	
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10	
Sample Note: Analysis performe	d by Life Science					
SAMPLE: FB Sand-KL-1		Lab ID: 10030496-001F	Compo	site		
SAMPLED BY: SG	Sample	Time: 03/01/2010 11:20				
Tont	Donult	h double and	SLOQ	Amabasia Cha-	A 1:- in E 1	A = b - t +
Test	Result	Method FDA 0005		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	9.26 dry mg/Kg	EPA 9065		03/10/10 9:30	03/10/10	
Sample Note: Analysis performe	d by QC Lab					

REMARKS:

- The above test procedures meet all the requirements of NELAC and relate only to these samples.

 * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	3/18/2010
	and Wi. Co-v		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030496

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PAGE: 4 of 4

10030496

PO#:

WO#:

PWS ID#

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

Pad Frac

RECEIVED FOR LAB BY: DLM2 DATE: 03/03/2010 9:50 Page 4 of 4

SAMPLE: TCLP Leachate of FB Sand-KL-	1 Lab ID: 1	0030496-001H	Compos	site		
SAMPLED BY: SG	Sample Time: 0	3/01/2010 11:20				
Tark	Describ	14-44	SLOQ	Amelicale Ctent	Analusia Fasi	A sadual #
<u>Test</u>	<u>Result</u>	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted <	0.0008 mg/L	EPA 7470A	8000.0	03/11/10 8:30	03/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
Cadmium - TCLP extracted <	0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Chromium - TCLP extracted <	0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Copper - TCLP extracted	0.230 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Lead - TCLP extracted	: 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Nickel - TCLP extracted	0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Selenium - TCLP extracted <	0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Silver - TCLP extracted <	: 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Zinc - TCLP extracted <	0.200 mg/L	EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time. Κ
- Ammonia sample not distilled

			•
MANAGER	(a in Nares	DATE:	3/18/2010
MAINACLIN	W. Owwe		

CHAIN OF CUSTODY						В	enchi		-					PAGE	/	OF	
REPORT TO: Talismon					25	66 P€	ennsylv Ph:							ARE SPEC	IAL DETE	CTION LI	MITS
							Fi	V	V/O#:	10)U3U	40	c	NEEDED:	YES	\ CNO)
			ATE SA LLEÇTI		S	_	·				,030	45	b	IFYES, PLI	EASE ATT	ACH	
						GW GW		ATER SO	SOIL	ł	NYDOH	MADI	EC VALUE	z IS/	QC PAC	KAGE NEE	DED?
CONTACT Steep and key	Т		PORT		/	/ SW WY	WASTE WAT	ER OT	THER			LAND		-	YES		ŀ
PH# 607-73/-0/45')T Qogu	o Atory			DE U	DEIONIZED							_ IF YES, PLI	EASE ATT	ACH REQ	UIREMENTS
FAX#	ì	N CO	OLER		/		/ /s	SULFURIC		ASC	DIUM HYDRO CORBIC ACII		PW\$ ID#				
BILL TO: Talisman.		WITH	ICE		' /	PHES INTIMUS COMPOSITE	SO ₃	NITRIC ACI	JLFITE NH,	I4 AMN	ETIC ACID WONIUM CH	LORIDE	Location				
PO# Completions		7	7.	7			Thio	NONE	HOSULFATE ZN Hg		C ACETATE RCURIC CHI	LORIDE	Sample Point				
PROJECT DESCRIPTION— PAG TYAC		/&	SAMO. SAMPLING	SALLE	1 3		Chlorine Residual	, / A	n incomplete cha	ain of c	custody m	av delav	the		∫ ₹	Tu di	Please fill
SAMPLEA SIGNATURE / AFFILIATION		That Samples	\$ /	E KAN	£/	W 854	Chlorine Residual Total Free	Q/	processin					,	THE STATE OF THE OWN T		out all applicable
Sower ako-	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\							/	ANALYSIS TO	O BE P	ERFORMED)		/8			areas comp let ely.
Container Sample Point No/Type	<u>/</u>						0 2 2			CONTAI				- (1)	&\ &\	AB LAB	USE ONLY
1 FB Sand. KL-1	3/1	1120	50	C	2er	N	-	TCLP 1	notals:	Ar,		,	r, Pb	\$13.07 \$7.00 \$2.00		$\mid \alpha$	H-AIC
2								Ha	Se, Ag,	Cy	, Ni					An Andrews	
3 A TPH								TPH	of the	e lig	under	Z	no 18 fees	ne			
4 B- pH, Free Light, & Mois	tur	2 /	hos	111,	3	4701	<u>S</u>	8260	Alcoho	150	9/4	co/s	3)	And the second			
5 C · 8260					<u> </u>	-		Torma	ldohyd	-	Brou	31/1	è	1,433 3,434			
6 D- Alcohol, Fornalde	hyd	رف	-					WE	Pluspi	7	*			2000 2000 2000 2000 2000			
7 E Glycol								Hmu			1964				SANOTE CONTRACT.	2.45 to	
8 F-Phenols								pta	l Phon	10/10	<u>'5)</u>						
9 GT. Sample					-												
10 H-TCLP Motals & Cu	11/2	12n			_					.,,	Λ	1	- l.	(A)			
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General F	Reference 287.54								
Date Prep	pared/Revised	Febr	uary 11, 2011						
	SEC	TION A. (CLIENT (GENERATOR	ROF THE WASTE) I	NFOR	MATION			
Company									
	Energy USA Inc								
	diary, Name of Pa	arent Compa	nny				Gener	ator ID	#
	Energy Inc.	lina 4		annani. Mailine Addr	!:	N/A			
	Mailing Address wood Place	Line 1	Ç.	ompany Mailing Addre	ess Line	2			
	Address Last Li	ne - City	State	Zip+4	P	hone		Ext	
Warrenda		ne – Oity	PA	15086		724) 814-530	1 0	LXL	
	Contact Last Na	me	First Name	MI		Suffi			
Brown			Dina						
Municipal	lity		(County					
Warrenda	ale			Allegheny					
Contact P			Contact Email Address						
(724) 814			dybrown@talismanusa.c						
			Mailing Address (noted a			ل_ا .	Yes		No
			eration and storage. Wast						
onsite.	1-024) well pad Sil	ie located at 7	720 Knights Drive, Troy Tov	wiship, Bradiord County	y, PA. I	ne waste is te	empora	aniy sto	rea
orioito.									
Municipal	l ity Troy		County Bradfo	ord		State	PA		
Municipal	lity Troy			ord E DESCRIPTION		State	PA		
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Residua Waste Co 804	al ode	Residua Code De	SECTION B. WAST al Waste scription low Back Sand)	Amount 151	l M	Unit of leasure	PA		e
Residua Waste Co 804	racing Flu	Residua Code De tid Waste (F	SECTION B. WAST al Waste escription low Back Sand) 1. GENERAL P	Amount 151 ROPERTIES	M cuy lb	Jnit of leasure /d ☐ gal ☑ ton	PA	Fram	e
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Residua Waste Co 804	racing Flu	Residua Code De tid Waste (F	SECTION B. WAST al Waste escription low Back Sand) 1. GENERAL P	Amount 151 ROPERTIES (based on analyses or thod 9095)	M Cuy	Jnit of leasure /d ☐ gal ☑ ton	PA	Fram	e
Residua Waste Co 804	Fracing Flu	Residua Code De tid Waste (F	SECTION B. WAST al Waste escription low Back Sand) 1. GENERAL P 1. To T.57 Liquid Waste (EPA Me	Amount 151 ROPERTIES (based on analyses or ethod 9095) 95)	M Cuy	Jnit of leasure /d ☐ gal ☑ ton	PA	Fram	e
Residua Waste Co 804 i. a. ph b. Ph	Fracing Flu	Residua Code De tid Waste (F 7.30	SECTION B. WAST al Waste scription low Back Sand) 1. GENERAL P 1. To 7.57 Liquid Waste (EPA Method 90) Solid (EPA Method 90) Gas (ambient tempera	Amount 151 ROPERTIES (based on analyses or bthod 9095) 95) ture & pressure)	U Sulvers of the second	Jnit of leasure /d ☐ gal ☐ ton	PA	Fram	e
Residua Waste Co 804 i. a. ph b. Ph	Fracing Flu Fracing Flu H Range nysical State	Residua Code De tid Waste (F 7.30	SECTION B. WAST al Waste scription low Back Sand) 1. GENERAL P 1. To 7.57 Liquid Waste (EPA Method 90) Solid (EPA Method 90) Gas (ambient tempera	Amount 151 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Ode	u cu y lb knowled	Jnit of leasure /d ☐ gal ☑ ton	PA	Fram	e
Residua Waste Co 804 i. a. ph b. Ph	Fracing Flu Fracing Flu H Range nysical State	Residua Code De tid Waste (F 7.30	SECTION B. WAST al Waste scription low Back Sand) 1. GENERAL P 1. To 7.57 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera Color Greyish Black	Amount 151 ROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Odd Phases of Separation	u cu y lb knowled	Jnit of leasure of lea	PA	Fram	e
Residua Waste Co 804 i. a. ph b. Ph	Fracing Flu Fracing Flu H Range nysical State	Residua Code De tid Waste (F 7.30	SECTION B. WAST al Waste escription low Back Sand) 1. GENERAL P 1. To T.57 Liquid Waste (EPA Me Solid (EPA Method 90: Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	Amount 151 ROPERTIES (based on analyses or ethod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	u cu y lb knowled	Jnit of leasure of lea	PA	Fram	e
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2540-PM-BWM0347 Rev. 1/2011

30 MAR 10 M	J.	PROCESS DESCRIPTION &			the contract of the contract o	representation of the first field of the field of the first field of the field of the first field of the field of the first fie						
а.	A detailed description of the the waste, as specified in the		ution control proce	sses producing	∑ Yes	☐ No						
b.	A schematic of the manufacture as specified in the instruction		rol processes prod	ucing the waste,	⊠ Yes	☐ No						
C.	If portions of the information a confidentiality claim, as des			n for Yes	☐ No	⊠ N/A						
	SECTION C. MANAGEMENT OF RESIDUAL WASTE											
		1. Processing or Di	SPOSAL FACILITY(IE	s)		r.						
The ar	ea below (ad.) will accommod	ate the identification of tw	o facilities. Attach	additional sheets	if necessary.							
a.	Solid waste permit number(s) 100361	for processing or disposa	al facility being utili	zed.								
b.	Facility Name	McKean County Landfil	l									
	Address Line 1	19 Ness Lane										
	Address Line 1			1000								
	Address City State ZIP	Kane	PA	16735								
	Municipality	Kane	County	McKean								
c.	•	cility Contact Name Mike Manderfeld										
	Title	General Manager										
	Phone 814-778-9931 Email Address manderfeld@gmail.com											
		014-770-9931	Email Address	mandeneid@gm	all.COIII							
d.	Volume of waste shipped to p	rocessing or disposal fac cu yd gal[ility in the previous	year. (check one)								
d. a.	Volume of waste shipped to p	rocessing or disposal fac cu yd gal[ility in the previous	year. (check one)								
	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name	rocessing or disposal fac cu yd gal[ility in the previous	year. (check one)								
a.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1	rocessing or disposal fac cu yd gal[ility in the previous	year. (check one)								
a.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	rocessing or disposal fac cu yd gal[ility in the previous	year. (check one)								
a.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address City State ZIP	rocessing or disposal fac cu yd gal[ility in the previous I b	year. (check one)								
a. b.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	rocessing or disposal fac cu yd gal[ility in the previous	year. (check one)								
a.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	rocessing or disposal fac cu yd gal[ility in the previous I b	year. (check one)								
a. b.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal fac cu yd gal[ility in the previous Ib	year. (check one)								
a. b.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal fac cu yd gal for processing or disposa	ility in the previous lb	year. (check one) zed.								
a. b.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	rocessing or disposal fac cu yd gal for processing or disposa	ility in the previous lb	year. (check one) zed. year.								
a. b.	Volume of waste shipped to p 151	rocessing or disposal fac cu yd	County Email Address Ilb	year. (check one) zed. year.								
a. b.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal fac cu yd	County Email Address Ilb	year. (check one) zed. year.		No No						
a. b.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p Has the waste been approved If "Yes", list the general perm	rocessing or disposal fac cu yd	County Email Address Ib County County	year. (check one) zed. year.		No No						
a. b.	Volume of waste shipped to p 151 Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal fac cu yd	County Email Address Ib County County	year. (check one) zed. year.	Yes	∑ No						

			SECTION D. CERTIFICATION							
Report obtain knowle	I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.									
Check	the following, if applicat	le:								
	I certify the information and has not chan	-	ired in Section B-1, General Properties was supplied to the Department for the year							
	Form Submitted:		Form 26R							
			Other (specify)							
	Date Submitted:									
	I certify the information and has not chan	-	ired in Section B-2, Chemical Analysis was supplied to the Department for the year							
	Form Submitted:		Form 26R							
			Other (specify)							
	Date Submitted:									
	l certify the information if for the year and h	•	ed in Section B-3, Process Description and Schematic, was supplied to the Department t changed.							
	Form Submitted:		Form 26R							
			Other (specify)							
	Date Submitted:									
Name	of Responsible Official		Title Environmental Specialist							
Dina B	rown									
Signat	ure	-	518m Date 2(25/4							

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10030514

PAGE:

1 of 4

PO#:

PWS ID#

PHONE: FAX:

(607) 731-0145

(607) 562-4001

TEST REPORT

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 1 of 4

SAMPLE: FB Sand-KN-1		Lab II	D: 10030514-001A	Compo	osite						
SAMPLED BY: SG	San	nple Time	9: 03/01/2010 14:15				w				
<u>Test</u>	Result		<u>Method</u>	SLOQ	Analysis Start	Analysis End	Analyst *				
Bromine	4.60 mg/kg	K	HACH 8167	0.05	03/12/10 13:26	03/12/10	TLB-CV				
Percent Moisture	4.7 %		SM2540G		03/09/10 12:30	03/10/10	NFM-SA				
Total Petroleum Hydrocarbons	< 180 mg/Kg-dry		EPA 1664A	180	03/12/10 13:50	03/15/10	DTG-CV				
SAMPLE: FB Sand-KN-1		Lab IC): 10030514-001B	Compo	osite						
SAMPLED BY: SG	Sam	ple Time	: 03/01/2010 14:15								
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *					
Ammonia as N	< 105 mg/kg-dry	U	Lachat	105	03/04/10 12:07	03/04/10	KAL-SA				
Free Liquid	< 0.1 %		EPA 9095A	0.1	03/11/10 11:05	03/11/10	IC-SA				
На	7.57@23.8°C		EPA 9045C	•••	03/10/10 16:00	03/10/10	NFM-SA				
Phosphorus	< 3 mg/kg		EPA 365.3	3	03/16/10 11:04	03/16/10	JP-SA				
SAMPLE: FB Sand-KN-1		Lab ID: 10030514-001C				Composite					
SAMPLED BY: SG	Sam	Sample Time: 03/01/2010 14:15									
Tool	Desuit		B. S. a.Ld	SLOQ	A						
. <u>Test</u>	Result		Method	0.040	Analysis Start	Analysis End					
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
2-Butanone	< 0.210 mg/Kg-dry		EPA 8260B	0.210	03/08/10 14:09	03/09/10	DN-CV				
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV				

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time. K
- Ammonia sample not distilled

	71		
MANAGER	Carrie M. Davis	DATE:	3/17/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

10030514

2 of 4

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PAGE:

WO#:

PO#:

PWS ID#

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2 DATE: 03/03/2010 9:38 Page 2 of 4

EIVED FOR LAB BY: DLM2	DATE: 0	3/03/2010 9:38			Page 2 of 4		
1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-ÇV	
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Ammonia sample not distilled

	/ ł	7			
MANAGER	Carri No	1. Davis	DATE:	3/17/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

PHONE:

FAX:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PAGE: 3 of 4

10030514

PO#:

WO#:

PWS ID#

(607) 562-4001 NTSW TCLP Metals/TPH/pH/%Moisture

(607) 731-0145

RECEIVED FOR LAB BY: DLM2 DATE: 03/03/2010 9:38 Page 3 of 4

TEST REPORT

SAMPLE: FB Sand-KN-1		Lab ID: 10030514-001D	Composite					
SAMPLED BY: SG	Sampl	le Time: 03/01/2010 14:15						
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *		
Methanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV		
Ethanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV		
Isopropanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV		
t-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV		
n-Propanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV		
Isobutanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV		
n-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV		
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-CV		
SAMPLE: FB Sand-KN-1		Lab ID: 10030514-001E	Compo	site				
SAMPLED BY: SG	Sampl	e Time: 03/01/2010 14:15	•					
			SLOQ					
Test	<u>Result</u>	Method		Analysis Start	Analysis End	Analyst *		
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10			
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10			
Sample Note: Analysis performe	d by Life Science							
SAMPLE: FB Sand-KN-1		Lab ID: 10030514-001F	Compo	site				
SAMPLED BY: SG	Sample	Time: 03/01/2010 14:15	•					
_			<u>SLOQ</u>					
<u>Test</u>	Result	Method		Analysis Start	Analysis End	Analyst *		
Phenolics, Total Recoverable	3.93 dry mg/Kg	EPA 9065		03/10/10 9:30	03/10/10			
Sample Note: Analysis performe	d by QC Lab							

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	3/17/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10030514

PAGE: 4 of 4

PO#:

PWS ID#

PHONE: FAX:

(607) 731-0145

(607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

TEST REPORT

Page 4 of 4

SAMPLE: TCLP Leachate of FB		Lab ID: 10030514-001H Sample Time: 03/01/2010 14:15				
SAMPLED BY: SG	Sample 1					
<u>Test</u>	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	03/11/10 8:30	03/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Copper - TCLP extracted	0.116 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Ammonia sample not distilled

MANAGED	(ha David	DATE:	3/17/2010
MANAGER	Chui M. Oaks	DATE.	3/1//2010

CHAIN OF CUSTODY											FAGE	—UF_ / ——
REPORT TO: Tolisman				;	2566							
				•		14		10030	514		ARE SPECIAL DE	
	REFR	IGERA	TE SAM	APLES		VV	/U#:			C HEED FOR		/(NÓ)
			LECTIC		, DM	DRINKING WAT	ER SL	SLUDGE	NYDOH NYD	$()$ \Rightarrow $()$	IF YES, PLEASE AT	1
		/ GW GROUND WATER SO SOIL							IS A QC PACKAGE NEEDED?			
CONTACT Steve Constey	TRANSPORT / WW WASTE WATER			R OTHER				YE				
PH# 607-73/~0/451	LA	TO Bora	TORY	/	DE DE	DEIONIZED WA	NTER DI IYDROCHLOR		DOIUM HYDROXIDE		IF YES, PLEASE A	TTACH REQUIREMENTS
FAX# BILL TO: Talismon	1	N COO	LER			/ /s s	ULFURIC ACID	O AS AS	CORBIC ACID	PWS ID#		
BILL 10. Ja Jismon		WITH	ICE	_/	\§\	SO ₃ S	SODIUM SULFI	TE NH4 AN	IMONIUM CHLORIDE NC ACETATE	Location		
PO#Completions			/0	/ /	8 /8	/ <u>- N</u>	IONE		RCURIC CHLORIDE	Sample Point_		
PROJECT DESCRIPTION Pad Froc	1,	/ B /	SAMPLING	SAMPLETTEE		Choine Residual Tree	/ An in		custody may delay	y the	18 18 18 18 18 18 18 18 18 18 18 18 18 1	Please fill out all
SAMPLER SIGNATURE / AFFILIATION	/ /		\$ / 3				'/	processing of y	our sample(s).			applicable areas
They UEG	1	TIME		\\ \ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			/	ANALYSIS TO BE I				completely.
Container Sample Point No./Type	¥						- 20 1	(PER CONT.		1 0 0	1 (2000) 10 Y	LAB USE ONLY
1 FB Sand Kn-1	3/1	1415	50	C 50	N			4	Ar, Ba, Co	, ,	6	-001A-H
2							Hq, 50		u, Ni, Z			
3	-				_	ļ	TPH, P	4 1 1	quids, of		~	
4 A TPH Bromine							5260,	Alcohol	-//-			
5 B- W. Chem	1						tomal	A 7	Brown	ME		
6 C-85PD			1				10 tal	7.	2			50 Se 322 \$20 \$ 58 75 596 \$244
7 D. Mochols, Formoldehy	re					1		110-101				
8 E Glyol	 						Total	Phenoli	<i>e5</i>			
10 G. T. Sample	70							Du	0 71,716			
11 H. TCLP Metals LCu, Ni	10								e 3/15/10			
LAB USE ONLY DELIVERED BY			36	3			1	TEMPERATURE	UPON RECEIP	т <u>.</u> 3.	_°C ARRI	VALONICE(Y) N
RELINQUISHED BY		D D	ATE:		TIME		RECEIVED B	Y:			DATE:	TIME:
	<u>-</u> -			1/0		38					1 1	
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			·			4				~~~		Ad Graphics Printing 570-888-0685



typed each a	This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.										DEP USE ONLY Date Received & General Notes			
Genera	al Refer	ence 287.54												
Date P	repared	d/Revised	Fel	oruary 11,	2011									
		SEC1	TION A.	CLIEN	T (GENE	RATO	R OF THE WASTE) I	NFC	RMA	TION				
Compa	any Nar	A CONTRACTOR DESIGNATION OF THE PARTY OF THE	7.18.6			and the second s		artista (alexani)	A CONTRACTOR OF THE STATE OF TH	#E 125 - 105 - 1 - 10				
		ergy USA Inc												
		y, Name of Pa	rent Comp	any							Gener	rator ID)#	
		ergy Inc.								N/A				
-	-	ling Address	Line 1			C	company Mailing Addre	ess L	ine 2					
		l Place Iress Last Lin	o – City			State	Zip+4		Phone			Ext		
Warre		iless Last Liii	ie – City			PA	15086			814-53	00	LX		
		ntact Last Nar	ne	F	irst Name		MI		(- 1)	Suffi				
Brown	-				Dina									
Munici						1	County							
Warre							Allegheny							
	t Phon		Ext		Email Ad									
	314-53	21 enerated at th			n@talism						Yes	<u> </u>	N1-	
							te is generated during n	atural	nae co	moletion		tions at	No t the	
11.10	(01-04	4) well pad site	e located at	720 Kniał	nts Drive.	Trov To	wnship, Bradford County	v. PA.	. The w	aste is t	empora	arily sto	red	
onsite.	X	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>						,					·	
		_		_					_					
Munici	pality	Troy			County	Bradf		-	Si	tate	PA			
						WAST	E DESCRIPTION							
Resid				ual Waste			A		Unit of Time					
Waste	Code		Code D	escriptio	<u> </u>		Amount		Measi u yd	ure gal	-	Fram	<u>e</u>	
804		Fracing Flui	id Waste (Flow Bac	k Sand)		151	Hi		⊠ ton	1 🗆	One -	Гime	
•					1. GE	NERAL F	PROPERTIES							
a.	pH Ra	nge	7.3	0 to			(based on analyses or	knowl	ledge)			W-2000000000000000000000000000000000000		
b.	Physic	al State			id Waste	(EPA Me	ethod 9095)							
					d (EPA Me									
					(ambient	tempera	ature & pressure)							
c.	Physic	al Appearanc	e	Color		h Black			Hydro	carbon				
						•	d Phases of Separation	n _	One					
				Describe	e each ph	ase of s	separation. <u>Sand</u>							
					NEW CAL	ANIALY	SIS ATTACHMENTS							
a.	The re	sults of a det	ailad cham				e waste, as described	in the		\square	Yes	$\overline{}$	No	
a.		ctions, is atta		icai ciiai e	occ. izati	011 01 1111	e waste, as described	ni aic	•		103	ш	NO	
b.		iled descripti		aste sam	pling me	thod is	attached.			\boxtimes	Yes		No	
C.	•	-	ce/quality	control p	rocedure	s emplo	yed by the laboratory(ies) i	s		Yes		No	
	attach					n in -4/-	ala al				Var		NI-	
d.		sults of the h							7 1/		Yes		No	
e.		actual chemi				use or ge	enerator knowledge in	L	Yes		No		N/A	

2540-PM-BWM0347 Rev. 1/2011

	3.	PROCESS DESCRIPTION &	SCHEMATIC ATTACHME	NTS			
a.	A detailed description of the the the waste, as specified in the		ition control processes	producing	⊠ Yes	☐ No	
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, No as specified in the instructions, is attached.						
C.	If portions of the information a confidentiality claim, as des			Yes	☐ No	⊠ N/A	
	SECTION C. MANAGEMENT OF RESIDUAL WASTE						
		1. PROCESSING OR DIS	POSAL FACILITY(IES)				
The area below (ad.) will accommodate the identification of two facilities. Attach additional sheets if necessary.							
a.	Solid waste permit number(s) 100361	for processing or disposa	l facility being utilized.				
b.	Facility Name	McKean County Landfill					
	Address Line 1	19 Ness Lane					
	Address Line 1						
	Address City State ZIP	Kane	PA	16735			
	Municipality	Kane	County Mo	Kean			
C.	Facility Contact Name	Mike Manderfeld					
	Title	General Manager					
	Phone	814-778-9931	Email Address ma	nderfeld@gm	ail.com		
d.	Volume of waste shipped to p	rocessing or disposal faci	lity in the previous yea	r.			
	151	cu yd gal] lb 🔀 ton	(check one))		
a.	Solid waste permit number(s)	for processing or disposa	l facility being utilized.				
b.	Facility Name						
	Address Line 1						
	Address Line 1						
	Address City State ZIP						
	Municipality County						
C.	Facility Contact Name						
	Title						
	Phone		Email Address				
d.	Volume of waste shipped to processing or disposal facility in the previous year.						
		cu yd gal	lb ton	(check one)	1		
£ *	2. BENEFICIAL USE						
a.	Has the waste been approved for beneficial use?						
	If "Yes", list the general permit number or approval number.						
b.	Volume of waste beneficially		¬				
	0	cu yd 🔲 gal 📗] lb [] ton	(check one)	•		

			SECTION D	D. CERTIFICAT	TION
Report obtain know	rt and all attached docu ning the information, I v	ments erify the s	and that based up that the submitted ubmission of false	pon my inquiry of information is tru information herein	iar with the information submitted in this Annual those individuals immediately responsible for ite, accurate and complete to the best of my is made subject to the penalties of 18 Pa. C.S. I imprisonment.
Check	k the following, if applicab	le:			
	I certify the information and has not change	-	red in Section B-1,	General Properties	s was supplied to the Department for the year
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
	I certify the information and has not change	-	red in Section B-2,	Chemical Analysis	s was supplied to the Department for the year
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
	I certify the information r	-		rocess Description	and Schematic, was supplied to the Department
	Form Submitted:		Form 26R		
			Other (specify)		
	Date Submitted:				
Name	of Responsible Official			Title	Environmental Specialist
Dina I	Brown				
Signa	ture		5/60-	Date	2/25/4

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

TEST REPORT

WO#:

10030514

PAGE:

1 of 4

PO#:

PWS ID#

PHONE: FAX: (607) 731-0145 (607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 1 of 4

SAMPLE: FB \$and-KN-1		Lab II	D: 10030514-001A	Comp	osite				
SAMPLED BY: SG	San	nple Time	9: 03/01/2010 14:15	01.00					
<u>Test</u>	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *		
Bromine	4.60 mg/kg	K	HACH 8167	0.05	03/12/10 13:26	03/12/10	TLB-CV		
Percent Moisture	4.7 %		SM2540G		03/09/10 12:30	03/10/10	NFM-SA		
Total Petroleum Hydrocarbons	< 180 mg/Kg-dry		EPA 1664A	180	03/12/10 13:50	03/15/10	DTG-CV		
SAMPLE: FB Sand-KN-1	AND A TOTAL PARK AND THE REST OF THE PARK AND THE REST.	Lab (C	D: 10030514-001B	Compo	osite				
SAMPLED BY: SG	Sam	ple Time	: 03/01/2010 14:15						
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *		
Ammonia as N	< 105 mg/kg-dry	U	Lachat	105	03/04/10 12:07	Analysis End 03/04/10			
		Ū					KAL-SA		
Free Liquid	< 0.1 %		EPA 9095A	0.1	03/11/10 11:05	03/11/10	IC-SA		
pH	7.57@23.8°C		EPA 9045C		03/10/10 16:00	03/10/10	NFM-SA		
Phosphorus	< 3 mg/kg		EPA 365.3	3	03/16/10 11:04	03/16/10	JP-\$A		
SAMPLE: FB Sand-KN-1		Lab ID): 10030514-001C	Compo	osite				
SAMPLED BY: SG	Sam	•							
Toot	Daniell		8.4 . 4	SLOQ					
Test	Result		Method		Analysis Start	Analysis End	Analyst *		
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
2-Butanone	< 0.210 mg/Kg-dry		EPA 8260B	0.210	03/08/10 14:09	03/09/10	DN-CV		
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- K Sample was received past holding time.
- U Ammonia sample not distilled

	La transfer Tout in	DATE:	3/17/2010
MANAGER	Carris M. Davis	DATE:	3/1//2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10030514

PAGE:

2 of 4

PO#:

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

PWS ID#

NTSW TCLP Metals/TPH/pH/%Moisture

CEIVED FOR LAB BY: DLM2	DATE: 03	3/03/2010 9:38			P	age 2 of 4
1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

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- Sample was received past holding time.
- Ammonia sample not distilled

MANAGER	Cam	M. Davis	DATE:	3/17/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

10030514

3 of 4

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

337 Daniel Zenker Dr ADDRESS:

Horseheads, NY 14845

PAGE:

PO#:

PWS ID#

WO#:

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2 DATE: 03/03/2010 9:38 Page 3 of 4

SAMPLE: FB Sand-KN-1	l l	_ab ID: 10030514-001D	Compo	site		
SAMPLED BY: SG	Sample	Time: 03/01/2010 14:15				
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst
Methanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-C
Ethanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-C
Isopropanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-C\
t-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-C\
n-Propanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-C\
Isobutanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-C\
n-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-C\
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-C\
SAMPLE: FB Sand-KN-1	Ĺ	ab ID: 10030514-001E	Compo	site		
SAMPLED BY: SG	Sample	Time: 03/01/2010 14:15	•			
 .			SLOQ			
<u>Test</u>	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst '
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10	
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10	
Sample Note: Analysis performe	d by Life Science					
SAMPLE: FB Sand-KN-1	L	ab ID: 10030514-001F	Compo	site		
SAMPLED BY: SG	Sample	Time: 03/01/2010 14:15	•			
•			SLOQ			
<u>Test</u>	<u>Result</u>	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	3.93 dry mg/Kg	EPA 9065		03/10/10 9:30	03/10/10	

REMARKS:

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- Sample was received past holding time. K
- Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	3/17/2010
	The state of the s		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Steve Gridley COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10030514

PAGE:

4 of 4

PO#:

PWS ID#

TEST REPORT

PHONE: FAX:

(607) 731-0145

(607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 4 of 4

KN-1	ab ID: 10030514-001H	Compo	site		
Sample	Time: 03/01/2010 14:15				
- ·		<u>SLOQ</u>			
Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
< 0.0008 mg/L	EPA 7470A	0.0008	03/11/10 8:30	03/12/10	KW-CV
< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
< 10.00 mg/L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
0.116 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
< 0.200 mg/L	EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV
	Result < 0.0008 mg/L < 0.500 mg/L < 10.00 mg/L < 0.100 mg/L < 0.500 mg/L < 0.100 mg/L < 0.100 mg/L	Sample Time: 03/01/2010 14:15 Result Method < 0.0008 mg/L	Sample Time: 03/01/2010 14:15 Result Method < 0.0008 mg/L	Sample Time: 03/01/2010 14:15 Result Method Analysis Start < 0.0008 mg/L	Sample Time: 03/01/2010 14:15 Result Method Analysis Start Analysis End < 0.0008 mg/L

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Ammonia sample not distilled

MANAGER	Carrie M. Darks	DATE:	3/17/2010
	SPOKAN III. C		

CHAIN OF CUSTODY											PAGE	OF
REPORT TO: Tolisman					2566					1	ARE SPECIAL DI	ETECTION LIMITS
	ĺ					1	N/O#:	10030	0514		NEEDED: YES	
	REFF	RIGERA	ATE SAI	MPLES	•	•	WIOT.		INCOULIS AHE BE	ING LISED FOR:	IF YES, PLEASE	
	t .		LECTIO		,	W DRINKING	NATER SL	SLUDGE	NYDOH NY	$\mathcal{L}(\mathcal{L})$		1
	l				/ @	W GROUND Y	ATER SO	SOIL				PACKAGE NEEDED?
CONTACT Steep Condition	Т	RANS	PORT		, ,	w Surface\ W wastewa	TER OTHER	HAZARDOUS	LAN	IDFILL	Y	(ES (NO)
PH# 607-73/-0145		TC			/ 5	E DEIONIZED			R PERSONAL OTH		IF YES, PLEASE	ATTACH REQUIREMENTS
FAX#		ABOR <i>i</i> In Co(ATORY		/ / 🖠	#/ /H s	HYDROCHLORI SULFURIC ACID		SODIUM HYDROXIDE ASCORBIC ACID	PWS ID#		
BILL TO: Taliquion		WITH				/ N SO:	NITRIC ACID	AC A	ACETIC ACID AMMONIUM CHLORID	Location		
				-/	13/	/ Thio	SODIUM THIOS	ulfate zn z	INC ACETATE	Sample Point		
PO# Completions			/ <u>ş</u>		/ 💈 / s	<u> </u>	NONE	Hg N	MERCURIC CHLORIDI	E		
L2H Pad Frac		TIME	SAMPLING	SAMPLE	SAMPLER WITH.	Chorine Residual	An inc		of custody may del	ay the	Sall to Care t	Please fill out all
SAMPLER SIGNATURE / AFFILIATION	1 /	**************************************	\$ /			Z Z Z Z Z	4/	processing of	your sample(s).			applicable
They UEG	1/2		9 / <u>\$</u>		'/\\$\/	7 te ja	. /	ANALYSIS TO BE	PERFORMED			areas completely.
Container Sample Point No./Type	14	<u> </u>	/ 3	/ ^{&} /	/ 8/ 6	1000	/	(PER CON	TAINER)		/ 50/	LAB USE ONLY
	3/1	1415	50	0	50 N		Tapn	Motals!	Ar, Ba,	Ed, Cr. P.	6	-001A-H
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g F. Phenol		ļ									2 2 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
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RELINQUISHED BY	0.14.888_44.66.	*	ATE:	3 1/6	TIME	38	RECEIVED BY	t:		. The Mark The Age of Section 1	DATE:	TIME:
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COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed each a	or legib attache	ly printed in the sheet as Fo	he spaces orm 26R,	provided. If add	ditional sp em numb	red information mus ace is necessary, ide er and identify the noted below.	ntify [DEP Date Receiv	USE C		lotes
Genera	al Refer	ence 287.54									
Date P	repared	d/Revised	Feb	ruary 11, 2011							
		SECT	ION A.	CLIENT (GEN	IERATOR	OF THE WASTE)	NFORM	ATION			
Compa	any Nar					**************************************					
		ergy USA Inc.									
		y, Name of Par		any			THE PROPERTY OF THE PARTY OF TH	EPA	Gene	rator ID) #
Talism	ian Ene	ergy Inc.						N/A			
		ling Address L	_ine 1		Co	ompany Mailing Addr	ess Line 2				
		l Place									
		Iress Last Line	e – City		State	Zip+4	Pho			Ext	t
Warre					PA	15086	(724	<u>4) 814-53</u>			
		itact Last Nam	ie	First Na	me	MI		Suff	Х		
Brown				Dina							
Munici Warre	_					County					
	t Phon	Δ	Ext	Contact Email A		Allegheny					
	314-53	-	LXL	dybrown@talis		om					
			e Compan	y Mailing Addres					Yes	\square	No
						e is generated during n	atural gas	ت completion			
		03-008) G well	pad site lo	cated at 2202 Wo	olfe Hollow	Road, Columbia Towns	ship, Bradfo	ord County	, PA.	The wa	aste is
tempor	arily sto	red onsite.		-							
				. .				.			
Munici	pality	Colum	bia	County	Bradfo		Name of the second seco	State	PA		Market State (1986)
				Notes that the residence of the problem was to be seen a sittle of the contract of the contrac	. WAST	E DESCRIPTION	- THE				
Resid				ial Waste				it of		Time	
Waste	Code		Code D	escription		Amount		sure		Fram	1 e
804		Fracing Fluid	d Waste (F	Flow Back Sand)	359	☐ cu yd	gal ⊠ ton	$+$ $\overline{-}$	One	Timo
				1 6	ENEDAL D	ROPERTIES	Піп	<u>⊠</u> ton		One	ime
а.	pH Ra	nae	8.0			(based on analyses or	knowledge	<u>)</u>			
b.		al State	0.0	Liquid Wast		<u> </u>	Miowicage	<u> </u>			
ы.	i iiyate	ai Gtate		Solid (EPA I	•	•					
				_ `		ture & pressure)					
С.	Physic	al Appearance	 e		rish Black	Od	or Hvd	rocarbon			
-	,	an a spip a an anna	-			Phases of Separation					
					-	eparation. Sand					
				Decoribe oder p	311400 01 0	oparation: <u>Cara</u>					
				2. CHEMICA	AL ANALYS	SIS ATTACHMENTS					
a.		sults of a deta ctions, is attac		ical characteriza	tion of the	waste, as described	in the	\boxtimes	Yes		No
b.				aste sampling m	ethod is a	ttached.		\boxtimes	Yes		No
C.	The quattach	-	ce/quality o	control procedur	res employ	ed by the laboratory(ies) is	\boxtimes	Yes		No
d.			zardous w	aste determinat	ion is attac	ched.		\boxtimes	Yes		No
e.		cable, a detail actual chemic			use of ge	nerator knowledge in	☐ Ye	es	No		N/A

2540-PM-BWM0347 Rev. 1/2011

		Process Description & S			34,000				
a.	A detailed description of the the waste, as specified in the		on control proce	sses producing	⊠ Yes	☐ No			
b.	A schematic of the manufacture as specified in the instruction	uring and/or pollution contro is, is attached.	l processes prod	lucing the waste,	⊠ Yes	☐ No			
c.	If portions of the information a confidentiality claim, as des			n for Yes	☐ No	⊠ N/A			
	SECTION	ON C. MANAGEMENT	FOF RESIDU	AL WASTE					
		1. Processing or Disp							
The ar	ea below (ad.) will accommod	late the identification of two	facilities. Attach	additional sheets	if necessary	'-			
а.	Solid waste permit number(s) 100361	for processing or disposal	facility being utili	ized.					
b.	Facility Name	McKean County Landfill							
	Address Line 1	19 Ness Lane							
	Address Line 1								
	Address City State ZIP	Kane	PA	16735					
	Municipality	Kane	County	McKean					
c.	Facility Contact Name	Mike Manderfeld							
	Title	General Manager							
	Phone	814-778-9931 E	mail Address	manderfeld@gm	ail.com				
d.	Volume of waste shipped to p 359	rocessing or disposal facilit cu yd gal	y in the previous Ib ⊠ ton	_	ı				
a.	Solid waste permit number(s)	for processing or disposal t	facility being utili	zed.					
b.	Facility Name								
	Address Line 1								
	Address Line 1								
	Address City State ZIP								
	Municipality		County						
c.	Facility Contact Name								
	Title								
	Phone		mail Address						
d.	Volume of waste shipped to p	rocessing or disposal facilit	y in the previous Ib ☐ ton		1				
}-		2. BENEFICIA	ŭ:ller						
а.	Has the waste been approved	A CONTRACTOR OF THE PROPERTY O	AL USE		☐ Yes	⊠ No			
~.	• •		er		□ ,63	Z 140			
	If "Yes", list the general permit number or approval number.								
b.	Volume of waste beneficially								

			SECTION D. CERTIFICATION
Repoi obtair know	rt and all attached docur ning the information, I v ledge. I understand that	ments erify the s	nave personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Checi	the following, if applicab	le:	
	I certify the information and has not chang	_	ired in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not change	•	ired in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information refor the year and ha		ed in Section B-3, Process Description and Schematic, was supplied to the Department t changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina I	Brown		
Signa	ture		Sten Date 2/25/11

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Dina Brown

ADDRESS:

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10122879

PAGE:

1 of 5

PO#:

COMPLETIONS

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

TEST REPORT

PWS ID#

RECEIVED FOR LAB BY: TJC

DATE: 12/17/2010 9:25

Page 1 of 5

SAMPLE: Flowback Sand		Lab II	D: 10122879-001A	Compo	site		
SAMPLED BY: Client	Sam	iple Tim	e: 12/17/2010 0:00				
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	137 mg/Kg	NQ	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
Ethanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
isopropanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
t-Butanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
n-Propanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
Isobutanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
n-Butanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
1,1-Dichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Methylene chloride	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Butanone	< 0.238 mg/Kg-dry		EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
trans-1,2-Dichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1-Dichloroethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
cis-1,2-Dichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Chloroform	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,1-Trichloroethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Carbon tetrachloride	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Benzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dichloroethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Trichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dichloropropane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Dibromomethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Bromodichloromethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
cis-1,3-Dichloropropene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV

REMARKS:

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- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- Ammonia sample not distilled

	/ /			
MANAGER	(4	M. Davis	DATE	: 12/22/2010
	aui	101.	B7314	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Dina Brown

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10122879

PAGE: 2 of 5

PO#:

PWS ID#

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TEST REPORT

PHONE: FAX:

(607) 562-4000

(607) 562-4001

RECEIVED FOR LAB BY: TJC	DATE:	12/17/2010 9:25			P	age 2 of 5
Toluene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
trans-1,3-Dichloropropene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,2-Trichloroethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Tetrachloroethene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Dibromochloromethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-ÇV
1,2-Dibromoethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Chlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Ethylbenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
m,p-Xylene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
o-Xylene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Xylenes, Total	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Bromoform	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,3-Trichloropropane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,3-Dichlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,4-Dichlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dichlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Acrolein	< 2.38 mg/Kg-dry	EPA 8260B	2.38	12/20/10 9:12	12/20/10	DN-CV
Carbon disulfide	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
мтве	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Acrylonitrile	< 0.238 mg/Kg-dry	EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Acetone	< 0.238 mg/Kg-dry	EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Vinyl acetate	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2,2-Dichloropropane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Parameter is not NELAC certified Ν
- Due to matrix effects, not all quality control parameters met acceptance criteria
- Ammonia sample not distilled

	*	71	_		
MANAGER		Carrie	M. Davis	DATE:	12/22/2010
		WAAAAA	101.		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Dina Brown

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10122879

PAGE:

3 of 5

PO#:

COMPLETIONS

TEST REPORT

PWS ID#

PHONE: FAX:

(607) 562-4000 (607) 562-4001

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DATE: 12/17/2010 9:25

Page 3 of 5

CIVED FOR EAD D1. 130	DATE	. 121	1772010 3.23				age 5 or 5
Tetrahydrofuran	< 0.238 mg/Kg-dry	N	EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Bromochloromethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1-Dichtoropropene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Chloroethyl vinyl ether	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,3-Dichloropropane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Hexanone	< 0.238 mg/Kg-dry		EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Styrene	< 0.048 mg/Kg-dry		EPA 8260B	0.048,	12/20/10 9:12	12/20/10	DN-CV
Cumene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Bromobenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
n-Propylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Chlorotoluene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
4-Chlorotoluene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,3,5-Trimethylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
tert-Butylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,4-Trimethylbenzene	0.109 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
sec-Butylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
p-Isopropyltoluene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
n-Butylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,4-Trichlorobenzene	< 0.048 mg/Kg-dry	Q	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Hexachlorobutadiene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Naphthalene	< 0.048 mg/Kg-dry	Q	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,3-Trichlorobenzene	< 0.048 mg/Kg-dry	Q	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Percent Moisture	15.9 %		SM2540G		12/20/10 16:25	12/21/10	BJW-CV

REMARKS:

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- Value above calibration range but within annually verified linear range
- Parameter is not NELAC certified Ν
- Due to matrix effects, not all quality control parameters met acceptance criteria
- Ammonia sample not distilled

	\cap			
MANAGER	Carri	M Savis	DATE:	12/22/2010
44, 11 4, 145,0001 5	SALA AL	7 Y 1 . (C/" Y "		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Dina Brown

COMPANY: ADDRESS:

Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10122879

PAGE:

4 of 5

PO#:

COMPLETIONS

PHONE:

(607) 562-4000

FAX:

(607) 562-4001

TEST REPORT

PWS ID#

0.500 12/21/10 11:30

0.100 12/21/10 11:30

10.00

0.100

1.25

12/21/10 11:30

12/21/10 11:30

12/21/10 11:30

12/21/10

12/21/10

12/21/10

12/21/10

12/21/10

GSR-CV

GSR-CV

GSR-CV

GSR-CV

GSR-CV

RECEIVED FOR LAB BY: TJC DATE: 12/17/2010 9:25 Page 4 of 5

SAMPLE: Flowback Sand	Lab ID: 10122879-001B Sample Time: 12/17/2010 0:00			Compo	Composite			
SAMPLED BY: Client				SLOQ				
<u>Test</u>	Result		Method	<u> </u>	Analysis Start	Analysis End	Analyst *	
Ammonia as N	26.8 mg/kg-dry	U	Lachat	11.9	12/21/10 10:30	12/21/10	KMF-SA	
Free Liquid	< 0.1 %		EPA 9095A	0.1	12/17/10 13:00	12/17/10	IC-SA	
рН	8.02@19.7°C		EPA 9045C		12/20/10 15:11	12/20/10	SG-SA	
Phosphorus	37 mg/kg-dry		EPA 365.3	6	12/20/10 13:20	12/21/10	JP-SA	
SAMPLE: Flowback Sand		Lab ID:	10122879-001C	Compo	site			
SAMPLED BY: Client	San	nple Time:	12/17/2010 0:00					
Test	Result		Method	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *	
Ethylene glycol	< 10:00 mg/Kg		Glycols by 8015	10.00	12/20/10 0:00	12/20/10		
Propylene glycol	< 10.00 mg/Kg		Glycols by 8015	10.00	12/20/10 0:00	12/20/10		
Sample Note: Analysis performed by	, · · · ·	tal Techno	ologies, Inc.				·	
SAMPLE: TCLP Leachate of Flowbac	k Sand	Lab ID:	: 10122879-001G	Compo	site			
SAMPLED BY: Client	San	nple Time:	12/17/2010 0:00	SLOQ				
Test	Result		Method	<u> OLOW</u>	Analysis Start	Analysis End	Analyst *	
Mercury - TCLP extracted	< 0.0008 mg/L		EPA 7470A	0.0008	12/20/10 11:30	12/21/10	KW-CV	
Aluminum - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV	
Antimony - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV	

EPA 6010B

EPA 6010B

EPA 6010B

EPA 6010B

EPA 6010B

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

< 0.500 mg/L

28.2 mg/L

< 0.100 mg/L

< 1.25 mg/L

< 0.100 mg/L

- Value above calibration range but within annually verified linear range
- Parameter is not NELAC certified N
- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- Ammonia sample not distilled

Arsenic - TCLP extracted

Barium - TCLP extracted

Boron - TCLP extracted

Beryllium - TCLP extracted

Cadmium - TCLP extracted

	/1				
MANAGER	Carri	M. Davis	DAT	E: 12/22/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

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NAME:

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COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

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10122879

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5 of 5

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(607) 562-4000 (607) 562-4001

TEST REPORT

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Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	0.191 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	19.4 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.610 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	0.421 mg/L	EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

REMARKS:

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- Value above calibration range but within annually verified linear range L
- Parameter is not NELAC certified Ν
- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- Ammonia sample not distilled

MANAGER	Carry	M. Davis	 DATE:	12/22/2010

CHAIN OF CUSTODY		Benc				PAGE 1	OF1
REPORT TO: Talisman / UEG		2566 Pennsy		404004			
gcowetlands@aol.com	1	Pl	W/O#:	10122	879	ARE SPECIAL DETE	
eschinsing@talisman us	COM	Į.				NEEDED: YES	
	AFTER COLLECTION	<i></i>		RESULTS ARE	BEING USED FOR:	IF YES, PLEASE ATT	ACH
Salat at a	711 TER COCEECOTION	DW DRINKING Y GW GROUND W		NYDOH	NYDEC PADEP	IS A QC PAC	KAGE NEEDED?
CONTACT STOVE Gridley	TRANSPORT	SW SURFACE V WW WASTE WAT	VATER HZ HAZARDOL	JS	LANDFILL	☐ YES	 I∕ NO
PH# 1007-751-0145- 607.377.9399	. To	/ DE DEMONIZED		WATER PERSONAL	OTHER	IF YES, PLEASE ATT	TACH REQUIREMENTS
FAX# 407.542.4001	LABORATORY	/ H		OH SODIUM HYDROX	IDE	1/5/	
BILL TO: Talisman	IN COOLER WITH ICE		NITRIC ACID A	AS ASCORBIC ACID AC ACETIC ACID		/ /ş/j/	
		SO ₃ Thio		IH. AMMONIUM CHLO IN ZING ACETATE	ORIDE /	\$ 18	
PO# COMPLETIONS	1 / /s/	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		g MERCURIC CHLO	RIDE / ¿Ž	'/ § /	
PROJECT DESCRIPTION			An incomplete chain of		the S	Ple:	ease fill out all olicable areas
SAMPLER SIGNATURE / AFFILIATION			processing of y	your sample(s).			completely
CONTAINER SAMPLING POINT	DATE SAMPLED TIME OF SAMPLING SAMPLE MATRIX	SAMOLER MITAL PRESERVATIVE	ANALYSIS TO BE DEDO	CORLER	RIDE RIDE RIDE RIDE RIDE RIDE RIDE RIDE	Ple. app	
CONTAINER SAMPLINGS POINT	13/2/3/3/	PRESERVATIVE SOURCESSIFE SOURC	ANALYSIS TO BE PERF (PER CONTAINE		/ §/ <i>§</i> /	/ LAB USI	E ONLY
1 Flowback Sane		TPH, pH,	Free Liquids, % M	oisture			6
2		Chloride	s, Sodium, Bromin	ne			
3		TCLP M	etals: Ar, Ba, Cd,	Cr, Pb, Hg, Se		A CAR	. لي الموجود المعادمة
4		Ag, Cu,	, Zn, Ni	-			E. L.
5		Alcohols	, Glycols, Formalo	dehyde			STATE OF THE PROPERTY OF THE P
6		EPA 826	60				
7		Total Ph	osphorus, Total Pl	henolics			
8			a - Nitrogen				
9							
10		1 1 4) HOUR TURN	IAROUND		DOWN THE PROPERTY OF THE PARTY	
11			DAY TURNAF	•			
The last of the second				tore error			
DELIVERED BY			ARBENDERA SERVICE	TURE UPONIRE	eppe y	C ARRIVA	LONICENTAL
RELINQUISHED BY	/ DATE:	TIME					
Lustr Bol	12/17/20	TIME: 9:25 Am	RECEIVED BT:			DATE:	TIME:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	DATE:	TIME:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	(A		DATE:	TIME:
	[]		1 say	UK.		DATE: 117/10	TIME: 725
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COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed each	or legibly attached	printed in the sp sheet as Form 2	ccurately completed. All repairs All repairs and its provided. If additional 26R, reference the item numbers are the complete the compl	I space is necessary, ide imber and identify the	ntify Date R	DEP USE C eceived & Ge	
Gener	al Refere	nce 287.54					
Date F	Prepared/I	Revised	February 11, 2011				
		SECTION	A. CLIENT (GENERAT	TOR OF THE WASTE)	INFORMATION	NC	
_	any Name						
		gy USA Inc.					
	• .	Name of Parent C	Company			EPA Gener	ator ID#
	nan Ener	gy inc. ng Address Line 1		Company Mailing Add		N/A	
	nnwood l			Company Maining Add	ress Line 2		
		ess Last Line – C	ity Stat	e Zip+4	Phone		Ext
Warre			PA	15086	(724) 814	4-5300	
-	-	act Last Name	First Name	MI		Suffix	
Brown			Dina				
Munic				County			
Warre	ct Phone	Ext	Contact Email Addres	Allegheny			
	814-5321		dybrown@talismanu				
			mpany Mailing Address (not	ted above)?		Yes	⊠ No
			e generation and storage. <u>V</u>		natural gas compl	etion opera	
T2	2H well pa	nd site located at 22	25 Buckwheat Road, Troy Tov	vnship, Bradford County, F	PA. The waste is t	emporarily:	stored onsite.
Munici	inality	Trov	County Pr	adford	State	DΛ	
Munic	ipality	Troy		adford	State	PA	
			SECTION B. WA	adford STE DESCRIPTION	V	PA	Timo
Resi	dual	R	SECTION B. WA	STE DESCRIPTIO	N Unit of	PA	Time Frame
Resi Waste	dual Code	R Co	SECTION B. WA esidual Waste ode Description	STE DESCRIPTION Amount	Unit of Measure	gal	Time Frame
Resi	dual Code	R Co	SECTION B. WA desidual Waste ode Description ste (Flow Back Sand)	Amount 402	Unit of Measure		
Resi Waste 804	dual Code	R Co Fracing Fluid Wa	SECTION B. WA residual Waste ode Description ste (Flow Back Sand) 1. GENERA	Amount 402 AL PROPERTIES	Unit of Measure cu yd lb	gal	Frame
Resi Waste 804	dual Code I	R Co Fracing Fluid Wa	SECTION B. WA esidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to	Amount 402 AL PROPERTIES (based on analyses or	Unit of Measure cu yd lb	gal	Frame
Resi Waste 804	dual Code	R Co Fracing Fluid Wa	SECTION B. WA esidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method	Amount 402 AL PROPERTIES (based on analyses or Method 9095)	Unit of Measure cu yd lb	gal	Frame
Resi Waste 804	dual Code I pH Rang Physica	R Co Fracing Fluid Wa ge I State	SECTION B. WA Lesidual Waste ode Description Ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp	Amount 402 AL PROPERTIES (based on analyses or Method 9095) d 9095) perature & pressure)	Unit of Measure cu yd lb knowledge)	gal ton	Frame
Resi Waste 804 a. b.	dual Code I pH Rang Physica	R Co Fracing Fluid Wa	SECTION B. WA esidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla	Amount 402 AL PROPERTIES (based on analyses or Method 9095) 1 9095) Derature & pressure) ack Oct.	Unit of Measure cu yd bis knowledge)	gal ton	Frame
Resi Waste 804 a. b.	dual Code I pH Rang Physica	R Co Fracing Fluid Wa ge I State	SECTION B. WA desidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla Number of Solid or Li	Amount 402 AL PROPERTIES (based on analyses on Method 9095) 1 9095) Derature & pressure) ack Oct quid Phases of Separation	Unit of Measure cu yd bis knowledge)	gal ton	Frame
Resi Waste 804 a. b.	dual Code I pH Rang Physica	R Co Fracing Fluid Wa ge I State	SECTION B. WA esidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla	Amount 402 AL PROPERTIES (based on analyses on Method 9095) 1 9095) Derature & pressure) ack Oct quid Phases of Separation	Unit of Measure cu yd bis knowledge)	gal ton	Frame
Resi Waste 804 a. b.	dual Code PH Rang Physica	R Co Fracing Fluid Wa ge I State	SECTION B. WA Lesidual Waste ode Description Ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla Number of Solid or Li Describe each phase	Amount 402 AL PROPERTIES (based on analyses on Method 9095) deck 000 perature & pressure) ack 000 quid Phases of Separation of separation. Sand	Unit of Measure Cu yd Db Nowledge Hydrocar One	gal ton	One Time
Resi Waste 804 a. b.	pH Rang Physica The resuinstructi	Fracing Fluid Wa ge I State I Appearance ults of a detailed clions, is attached.	SECTION B. WA desidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla Number of Solid or Li Describe each phase 2. CHEMICAL ANA chemical characterization of	Amount 402 AL PROPERTIES (based on analyses or Method 9095) Derature & pressure) Deck Quid Phases of Separation of separation. Sand ALYSIS ATTACHMENTS The waste, as described	Unit of Measure Cu yd Db Nowledge Hydrocar One	gal ton	One Time No
Resi Waste 804 a. b.	pH Rang Physica The resuinstructi A detaile	R Co Fracing Fluid Wa ge I State I Appearance ults of a detailed of ions, is attached. ed description of	SECTION B. WA desidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla Number of Solid or Li Describe each phase 2. CHEMICAL ANA Chemical characterization of the waste sampling method	Amount 402 AL PROPERTIES (based on analyses or Method 9095) Derature & pressure) Dack Quid Phases of Separation of separation. ALYSIS ATTACHMENTS The waste, as described is attached.	Unit of Measure cu yd lb knowledge) dor Hydrocar One in the	gal ton	One Time No No
Resi Waste 804 a. b.	pH Rang Physica The resuinstructi A detaile	R Co Fracing Fluid Wa ge I State I Appearance ults of a detailed of ions, is attached. ed description of lity assurance/qu	SECTION B. WA desidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla Number of Solid or Li Describe each phase 2. CHEMICAL ANA chemical characterization of	Amount 402 AL PROPERTIES (based on analyses or Method 9095) Derature & pressure) Dack Quid Phases of Separation of separation. ALYSIS ATTACHMENTS The waste, as described is attached.	Unit of Measure cu yd lb knowledge) dor Hydrocar One in the	gal ton	One Time No
Resi Waste 804 a. b.	pH Rang Physica The resuinstructi A detaile The qua	R Co	SECTION B. WA desidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla Number of Solid or Li Describe each phase 2. CHEMICAL ANA Chemical characterization of the waste sampling method	Amount 402 AL PROPERTIES (based on analyses on Method 9095) Derature & pressure) Dack Quid Phases of Separation of separation. ALYSIS ATTACHMENTS The waste, as described is attached. Ployed by the laboratory	Unit of Measure cu yd lb knowledge) dor Hydrocar One in the	gal ton	One Time No No
Resi Waste 804 a. b.	pH Range Physica The resuinstruction A detailed The quaattached The resulf applica	Fracing Fluid Warge Jesus State I Appearance Ults of a detailed come, is attached, ed description of lity assurance/quels, alts of the hazarde able, a detailed example.	SECTION B. WA desidual Waste ode Description ste (Flow Back Sand) 1. GENERA 7.05 to Liquid Waste (EPA Solid (EPA Method Gas (ambient temp Color Greyish Bla Number of Solid or Li Describe each phase 2. CHEMICAL ANA Chemical characterization of the waste sampling method ality control procedures em	Amount 402 AL PROPERTIES (based on analyses or Method 9095) d 9095) berature & pressure) ack Quid Phases of Separation of separation. Sand ALYSIS ATTACHMENTS f the waste, as described is attached. ployed by the laboratory attached.	Unit of Measure cu yd lb knowledge) dor Hydrocar One in the (ies) is	gal ton bon Yes Yes Yes Yes	No No No

a.		. PROCESS DESCRIPTION		A11111 P. (1) A 10 P. (2) P. (2)		Standing the Commentation and Comment of the Comment	
	A detailed description of the the waste, as specified in the			esses producing	⊠ Yes	☐ No	
b.	A schematic of the manufac as specified in the instruction		ontrol processes pro	ducing the waste,	∑ Yes	☐ No	
c.	If portions of the information a confidentiality claim, as de			on for Yes	No	⊠ N/A	
	SECT	ON C MANAGEM	ENT OF RESIDI	IAI WASTE			
-	SECTION C. MANAGEMENT OF RESIDUAL WASTE 1. Processing or Disposal Facility(ies)						
The ar	ea below (ad.) will accommo	date the identification of	two facilities. Attac	h additional sheets	if necessary		
	Solid waste permit number(•	
a.	100361	s) for processing or disp	Dsai lacility being uti				
b.	Facility Name	McKean County Land	dfill				
	Address Line 1	19 Ness Lane					
	Address Line 1						
	Address City State ZIP	Kane	PA	16735			
	Municipality	Kane	County	McKean			
C.	Facility Contact Name	Mike Manderfeld			.==		
	Title	General Manager					
	Phone	814-778-9931	Email Address	manderfeld@gn	nail.com		
d. a.	Volume of waste shipped to 402 Solid waste permit number(s	cu yd gal	☐ Ib ⊠ to	n (check one	•)		
u.		s) for processing or disp	osal facility being util	lized			
	· .	s) for processing or dispo	osal facility being uti	lized.			
b.	Facility Name	s) for processing or dispo	osal facility being uti	lized.			
b.	Facility Name Address Line 1	s) for processing or dispo	osal facility being uti	lized.			
b.	Facility Name Address Line 1 Address Line 1	s) for processing or dispo	osal facility being uti	lized.			
b.	Facility Name Address Line 1 Address Line 1 Address City State ZIP	s) for processing or dispo		lized.			
b.	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	s) for processing or dispo	osal facility being uti	lized.			
b. c.	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	s) for processing or dispo		lized.			
	Facility Name Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	s) for processing or dispo	County	lized.			
	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	s) for processing or dispo		lized.			
	Facility Name Address Line 1 Address City State ZIP Municipality Facility Contact Name Title		County Email Address				
C.	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	processing or disposal f	County Email Address acility in the previous lib lib loss	s year. n (check one			
c.	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to	processing or disposal f ☐ cu yd ☐ gal 2. Beni	County Email Address acility in the previous	s year.	З		
C.	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to	processing or disposal f cu yd gal 2. Beni	County Email Address acility in the previous to	s year. n (check one		No	
c.	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to Has the waste been approve If "Yes", list the general peri	processing or disposal f cu yd gal 2. BENI d for beneficial use?	County Email Address acility in the previous to	s year. n (check one	З	No No	
c.	Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to	processing or disposal f cu yd gal 2. BENI d for beneficial use?	County Email Address acility in the previous to	s year. n (check one	Yes	No	

			SECTION D. CERTIFICATION			
Repo obtai know	I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.					
Chec	k the following, if applicat	le:				
	I certify the information required in Section B-1, General Properties was supplied to the Department for the year and has not changed.					
	Form Submitted:		Form 26R			
			Other (specify)			
	Date Submitted:					
	I certify the information and has not chan		red in Section B-2, Chemical Analysis was supplied to the Department for the year			
	Form Submitted:		Form 26R			
			Other (specify)			
	Date Submitted:					
	I certify the information for the year and h		ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.			
	Form Submitted:		Form 26R			
			Other (specify)			
	Date Submitted:					
Name	of Responsible Official		Title Environmental Specialist			
Dina	Brown					
Signa	ture		Date 2(25/11			

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Work Order: 10070625

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10070625

PAGE: 1 of 3

PO#:

PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

Pad

RECEIVED FOR LAB BY: TJC DATE: 07/06/2010 13:04 Page 1 of 3

NECEIVED FOR EAD DT. 130	DAIL	011	00/2010 13.04			1.6	ige i oi s
SAMPLE: Pit-Flowback Sand SAMPLED BY: LS	Som		D: 10070625-001A e: 06/30/2010 9:00	Compo	site		
SAIVIPLED B1. LS	Sali	ibie i iii	e. 00/30/2010 9.00	SLOQ			
<u>Test</u>	<u>Result</u>		<u>Method</u>	***************************************	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Sodium	3430 mg/Kg-dry		EPA 6010B	131	07/08/10 7:00	07/09/10	JRA-CV
Bromine	13.8 mg/kg	N	HACH 8167	0.05	07/07/10 10:08	07/07/10	SMH-CV
Styrene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	07/07/10 15:29	07/08/10	DN-CV
Chloride	8830 mg/Kg-dry		EPA 300.0	51.9	07/07/10 15:24	07/08/10	HDP-CV
Formaldehyde	1.8 mg/Kg-dry	N	NIOSH 3500	1.0	07/09/10 8:15	07/09/10	LTW-CV
Percent Moisture	3.7 %		SM2540G		07/07/10 9:00	07/08/10	NFM-SA
SAMPLE: Pit-Flowback Sand		Lab I	D: 10070625-001B	Compo	site		
SAMPLED BY: LS	Sam	ple Tim	e: 06/30/2010 9:00				
	.			<u>SLOQ</u>			
<u>Test</u>	Result		Method		Analysis Start	Analysis End	Analyst *
Moisture	3.68 %		Moisture Calc.	0.01	07/07/10 9:00	07/08/10	NFM-SA
Ammonia as N	18.1 mg/kg-dry	U	Lachat	10.4	07/08/10 10:42	07/08/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	07/07/10 8:10	07/07/10	IC-SA
рН	7.05@22.2°C		EPA 9045C		07/07/10 14:41	07/07/10	MED-SA
Phosphorus	44 mg/kg-dry		EPA 365.3	22	07/08/10 10:15	07/08/10	MED-SA

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled

Carrie M. Davis DATE: 7/12/2010 **MANAGER**

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10070625

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10070625

PAGE: 2 of 3

PO#:

PWS ID#

FAX:

(607) 562-4000

(607) 562-4001

Pad

PHONE:

RECEIVED FOR LAB BY: TJC DATE: 07/06/2010 13:04 Page 2 of 3 Lab ID: 10070625-001C SAMPLE: Pit-Flowback Sand Composite SAMPLED BY: LS Sample Time: 06/30/2010 9:00 SLOQ Method Analysis End Analyst * Test Result Analysis Start 10.00 07/08/10 Ethylene glycol < 10.00 mg/Kg Glycols by 8015 07/08/10 0:00 07/08/10 Propylene glycol < 10.00 mg/Kg Glycols by 8015 10.00 07/08/10 0:00 Sample Note: Analysis performed by Summit Environmental Technologies, Inc. SAMPLE: Pit-Flowback Sand Lab ID: 10070625-001D Composite SAMPLED BY: LS Sample Time: 06/30/2010 9:00 SLOQ Result Analysis Start Analysis End Analyst * Test Method 6.60 mg/Kg DRY EPA 9065 1.30 07/08/10 8:45 07/08/10 Phenolics, Total Recoverable Sample Note: Analysis performed by QC Laboratories. Sample Note: Holding times for preparation or analysis exceeded Lab ID: 10070625-001E Composite SAMPLE: Pit-Flowback Sand

SAMPLED BY: LS Sample Time: 06/30/2010 9:00

SLOQ

Result Analysis End Analyst * <u>Test</u> Method Analysis Start 170 07/07/10 0:00 07/07/10 Total Petroleum Hydrocarbons 232 mg/Kg EPA 9071 Sample Note: Analysis performed by Microbac-Erie

Lab ID: 10070625-001G Composite SAMPLE: TCLP Leachate of Pit-Flowback Sand

SAMPLED BY: LS Sample Time: 06/30/2010 9:00

SLOQ Test Result Method Analysis Start Analysis End Analyst * < 0.0008 mg/L0.0008 07/08/10 11:00 07/09/10 Mercury - TCLP extracted **EPA 7470A** KW-CV Arsenic - TCLP extracted < 0.500 mg/L**EPA 6010B** 0.500 07/08/10 11:45 07/09/10 JRA-CV 07/09/10 **EPA 6010B** 10.00 07/08/10 11:45 Barium - TCLP extracted 28.7 mg/L JRA-CV Cadmium - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 07/08/10 11:45 07/09/10 JRA-CV Chromium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 07/08/10 11:45 07/09/10 JRA-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Ammonia sample not distilled

Carrie M. Davis 7/12/2010 DATE: MANAGER

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Work Order: 10070625

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10070625

PAGE:

3 of 3

PO#:

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

TEST REPORT

PWS ID#

EIVED FOR LAB BY: TJC	DATE:	07/06/2010 13:04			P	age 3 of 3
Copper - TCLP extracted	0.671 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-C\
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	07/08/10 11:45	07/09/10	JRA-CV

REMARKS:

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- Value above calibration range but within annually verified linear range
- Ν Parameter is not NELAC certified
- U Ammonia sample not distilled

	/ 1	¬ .		
MANAGER	ani	M. Davis	DATE:	7/12/2010



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed each	or legik attache	oly printed in the space d sheet as Form 26R	rately completed. All reques provided. If additional solution, reference the item numbets needs to match the date	pace is necessary, ide ber and identify the	ntify Date R	DEP USE C	
Gener	al Refe	rence 287.54					
Date F	repare	d/Revised Fe	ebruary 11, 2011				
		SECTION A.	. CLIENT (GENERATO	R OF THE WASTE) I	NFORMATI	ON	
Comp	any Nar			•			
		ergy USA Inc.					
		y, Name of Parent Com	npany			EPA Gener	ator ID#
		ergy Inc.		Common Mailine Adda		N/A	
	any wa nnwood	iling Address Line 1	•	Company Mailing Addr	ess Line 2		
		dress Last Line – City	State	Zip+4	Phone		Ext
	endale	arcas Last Line Oity	PA	15086	(724) 81	4-5300	LAC
		ntact Last Name	First Name	MI		Suffix	
Brown	-		Dina				
	ipality			County			
	endale			Allegheny			
	ct Phon		Contact Email Address				
	814-53		dybrown@talismanusa			☐ Yes	No.
			any Mailing Address (noted eneration and storage. <u>Wa</u> s		atural dae comp		⊠ No
II NO	(01-00	06) J well pad site locate	ed at 234 Phinney Drive, Troy	Township, Bradford Co.	unty, PA. The w	aste is temr	orarily stored
onsite.				,			
		_	.		.		
Munic	ipality	Troy	County Brad		State.	PA	
			SECTION B. WAS			PA	
Resi	idual	Resid	SECTION B. WAS dual Waste	TE DESCRIPTION	Unit of		Time
Resi Waste		Resid Code	SECTION B. WAS dual Waste Description	TE DESCRIPTION Amount	Unit of Measure		Time Frame
Resi	idual	Resid	SECTION B. WAS dual Waste Description	TE DESCRIPTION	Unit of Measure □ cu yd		
Resi Waste	idual	Resid Code	SECTION B. WAS dual Waste Description	Amount 877	Unit of Measure □ cu yd	gal	Frame
Resi Waste	idual	Resid Code Fracing Fluid Waste	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to	Amount 877 PROPERTIES (based on analyses or	Unit of Measure Cu yd Ib	gal	Frame
Resi Waste 804	idual Code pH Ra	Resid Code Fracing Fluid Waste	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA M	Amount 877 PROPERTIES (based on analyses or Method 9095)	Unit of Measure Cu yd Ib	gal	Frame
Resi Waste 804	idual Code pH Ra	Resid Code Fracing Fluid Waste	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA N Solid (EPA Method 9	Amount 877 PROPERTIES (based on analyses or dethod 9095) 095)	Unit of Measure Cu yd Ib	gal	Frame
Resi Waste 804	idual Code pH Ra Physic	Resid Code Fracing Fluid Waste nge 6.	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA M Solid (EPA Method 9 Gas (ambient temper	Amount 877 PROPERTIES (based on analyses or dethod 9095) 095) rature & pressure)	Unit of Measure Cu yd Ib knowledge)	gal ton 🗀	Frame
Resi Waste 804	idual Code pH Ra Physic	Resid Code Fracing Fluid Waste	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA M Solid (EPA Method 9 Gas (ambient temper Color Greyish Blace	Amount 877 PROPERTIES (based on analyses or dethod 9095) 095) rature & pressure) k Od	Unit of Measure Cu yd Dib knowledge)	gal ton 🗀	Frame
Resi Waste 804 a. b.	idual Code pH Ra Physic	Resid Code Fracing Fluid Waste nge 6.	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA N Solid (EPA Method 9 Gas (ambient temper Color Greyish Blac Number of Solid or Liquid	Amount 877 PROPERTIES (based on analyses or dethod 9095) 095) rature & pressure) k Oddid Phases of Separation	Unit of Measure Cu yd Dib Knowledge)	gal ton 🗀	Frame
Resi Waste 804 a. b.	idual Code pH Ra Physic	Resid Code Fracing Fluid Waste nge 6.	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA M Solid (EPA Method 9 Gas (ambient temper Color Greyish Blace	Amount 877 PROPERTIES (based on analyses or dethod 9095) 095) rature & pressure) k Oddid Phases of Separation	Unit of Measure Cu yd Dib Knowledge)	gal ton 🗀	Frame
Resi Waste 804 a. b.	idual Code pH Ra Physic	Resid Code Fracing Fluid Waste nge 6.	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA N Solid (EPA Method 9 Gas (ambient temper Color Greyish Blac Number of Solid or Liqu Describe each phase of	Amount 877 PROPERTIES (based on analyses or dethod 9095) 095) rature & pressure) k Oddid Phases of Separation separation. Sand	Unit of Measure Cu yd Dib Knowledge)	gal ton 🗀	Frame
Resi Waste 804 a. b.	pH Ra Physic	Resid Code Fracing Fluid Waste Inge 6. Cal State Cal Appearance Sults of a detailed chemical Code Code Code Code Code Code Code Code	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA N Solid (EPA Method 9 Gas (ambient temper Color Greyish Blac Number of Solid or Liquid	Amount 877 PROPERTIES (based on analyses or Method 9095) 095) rature & pressure) k Oddid Phases of Separation separation. Sand	Unit of Measure Cu yd Dib Knowledge) The Hydrocal Measure Mea	gal ton 🗀	Frame
Resi Waste 804	pH Ra Physic Physic	Resid Code Fracing Fluid Waste Inge 6 Cal State Cal Appearance Sults of a detailed cherections, is attached.	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA N Solid (EPA Method 9 Gas (ambient temper Color Greyish Blac Number of Solid or Liqu Describe each phase of 2. CHEMICAL ANAL mical characterization of the	Amount 877 PROPERTIES (based on analyses or dethod 9095) 095) rature & pressure) k Oddid Phases of Separation separation. Sand YSIS ATTACHMENTS he waste, as described	Unit of Measure Cu yd Dib Knowledge) The Hydrocal Measure Mea	gal lon lon rbon	Frame One Time
Resi Waste 804 a. b.	pH Ra Physic Physic The re instruct A deta	Resid Code Fracing Fluid Waste Inge 6. Cal State Cal Appearance Sults of a detailed cheretions, is attached. Itilied description of the pality assurance/quality	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA M Solid (EPA Method 9 Gas (ambient temper Color Greyish Blac Number of Solid or Liqu Describe each phase of	Amount 877 PROPERTIES (based on analyses or Method 9095) (095) (rature & pressure) (k Od Mid Phases of Separation Separation. Sand YSIS ATTACHMENTS The waste, as described sattached.	Unit of Measure cu yd b lb knowledge) The Measure Character of the Me	gal lon	One Time No
Resi Waste 804 a. b.	pH Ra Physic The re instruct A deta The quattach	Resid Code Fracing Fluid Waste Inge 6. Cal State Cal Appearance Sults of a detailed cheretions, is attached. Italial description of the pality assurance/quality ed.	SECTION B. WAS dual Waste Description (Flow Back Sand) 1. GENERAL 29 to Liquid Waste (EPA M Solid (EPA Method 9 Gas (ambient temper Color Greyish Blac Number of Solid or Liqu Describe each phase of 2. CHEMICAL ANAL mical characterization of the	Amount 877 PROPERTIES (based on analyses or Method 9095) (095) (rature & pressure) (k Od Mid Phases of Separation Separation. Sand YSIS ATTACHMENTS The waste, as described sattached. (oyed by the laboratory)	Unit of Measure cu yd b lb knowledge) The Measure Character of the Me	gal	One Time No No

NESS.		PROCESS DESCRIPTION & S				
a.	A detailed description of the r the waste, as specified in the		on control proces	ses producing	⊠ Yes	☐ No
b.	A schematic of the manufactuas specified in the instruction	ring and/or pollution contro s, is attached.	l processes produ	icing the waste,	⊠ Yes	☐ No
c.	If portions of the information a confidentiality claim, as des			for Yes	☐ No	⊠ N/A
	SECTION	N C. MANAGEMENT	OF RESIDUA	AL WASTE		1.7
		1. PROCESSING OR DISPO	SAL FACILITY(IES)		
The ar	ea below (ad.) will accommod	ate the identification of two	facilities. Attach a	additional sheets	if necessary	-
a.	Solid waste permit number(s) 100361	for processing or disposal f	acility being utiliz	ed.		
b.	Facility Name	McKean County Landfill		***************************************		
	Address Line 1	19 Ness Lane				
	Address Line 1					
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County	McKean		
C.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931 E	mail Address	manderfeld@gm	ail.com	
d.	Volume of waste shipped to p 877	cu yd 🔲 gal 📗	lb ⊠ ton	(check one)		
a.	Solid waste permit number(s)	for processing or disposal f	acility being utilize	ed.		
b.	Facility Name					
	Address Line 1					
	Address Line 1					
	Address City State ZIP					
	Municipality		County			
C.	Facility Contact Name					
	Title				=-000	
	Phone	E	mail Address			
d.	Volume of waste shipped to p	rocessing or disposal facility cu yd gal	y in the previous y lb ton	/ear. (check one)		
		2. Beneficia	L USE			
a.	Has the waste been approved	for beneficial use?			Yes	⊠ No
	If "Yes", list the general permi		er.			
b.	Volume of waste beneficially t	sed in the previous year. cu yd	lb 🔲 ton	(check one)		

		SECTION D. CERTIFICATION
Report and all attache obtaining the informat knowledge. I understa	d documents ion, I verify nd that the s	nave personally examined and am familiar with the information submitted in this Annual s and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my submission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check the following, if a	ipplicable:	
_	mation requi ot changed.	ired in Section B-1, General Properties was supplied to the Department for the year
Form Submitted	: 🔲	Form 26R
		Other (specify)
Date Submitted:	-	
-	mation requi ot changed.	ired in Section B-2, Chemical Analysis was supplied to the Department for the year
Form Submitted	: 🔲	Form 26R
		Other (specify)
Date Submitted:		
I certify the inform	•	ed in Section B-3, Process Description and Schematic, was supplied to the Department t changed.
Form Submitted:		Form 26R
		Other (specify)
Date Submitted:		
Name of Responsible Of	fficial	Title Environmental Specialist
Dina Brown		,
Signature	- 9	lsv_0 Date $2/2s/11$

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Work Order: 10050721

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME: WO#: 10050721

COMPANY: Talisman Energy USA, Inc. PAGE: 1 of 5 ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PO#:

PWS ID# **TEST REPORT**

PHONE: (607) 562-4000

FAX: (607) 562-4001

Pad

RECEIVED FOR LAB BY: DLM2 DATE: 05/06/2010 11:51 Page 1 of 5

SAMPLE: Flowback Sand		Lab ID: 10050721-001A	Compo	site		
SAMPLED BY: SG	Samp	e Time: 05/04/2010 17:50				
Toot	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
<u>Test</u> Methanol	7 mg/Kg	Alcohols by FID	A	05/14/10 9:16	Analysis End 05/14/10	Analyst *
	• •	•	4			JJ6-CV
Ethanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
Isopropanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
t-Butanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
n-Propanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
Isobutanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
n-Butanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
Sodium	623 mg/Kg-dry	EPA 6010B	104	05/11/10 8:10	05/12/10	GSR-CV
Bromine	57.5 mg/kg	K HACH 8167	0.05	05/07/10 9:58	05/07/10	SMH-CV
1,1-Dichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Methylene chloride	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Butanone	< 0.215 mg/Kg-dry	EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV
trans-1,2-Dichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1-Dichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
cis-1,2-Dichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Chloroform	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1,1-Trichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Carbon tetrachloride	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Benzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Trichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dichloropropane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Dibromomethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled

ani M. Davis DATE: 5/17/2010 **MANAGER**

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10050721

PAGE: 2 of 5

PO#:

PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

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Page 2 of 5

CLIVED FOR LAB BT. DEIVIZ	DATE	. 05/1	00/2010 11.51			1.	age 2 01 3	
Bromodichloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
cis-1,3-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Toluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
4-Methyl-2-pentanone (MIBK)	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
trans-1,3-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,1,2-Trichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Tetrachloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Dibromochloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,2-Dibromoethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Chlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,1,1,2-Tetrachloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Ethylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
m,p-Xylene	< 0.043 mg/Kg-dry	N	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
o-Xylene	< 0.043 mg/Kg-dry	N	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Xylenes, Total	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Bromoform	0.237 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,1,2,2-Tetrachloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,2,3-Trichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,3-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,4-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
1,2-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Acrolein	< 2.15 mg/Kg-dry		EPA 8260B	2.15	05/11/10 14:06	05/11/10	DN-CV	
Carbon disulfide	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
MTBE	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	
Acrylonitrile	< 0.215 mg/Kg-dry		EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV	
Acetone	< 0.429 mg/Kg-dry		EPA 8260B	0.429	05/11/10 14:06	05/11/10	DN-CV	
Vinyl acetate	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV	

REMARKS:

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- Sample was received past holding time. Κ
- Value above calibration range but within annually verified linear range
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled

	/ 1		7
MANAGER	ani	M.	Davis

DATE:

5/17/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10050721

PAGE: 3 of 5

PO#:

PWS ID#

(607) 562-4000

(607) 562-4001

TEST REPORT

Pad

PHONE:

FAX:

RECEIVED FOR LAB BY: DLM2	DATE	: 0	5/06/2010 11:51			P	age 3 of 5
2,2-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Tetrahydrofuran	< 0.215 mg/Kg-dry	Ν	EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV

2,2-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Tetrahydrofuran	< 0.215 mg/Kg-dry	N	EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV
Bromochloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Chloroethyl vinyl ether	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,3-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Hexanone	< 0.215 mg/Kg-dry		EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV
Styrene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Cumene	< 0.043 mg/Kg-dry	N	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Bromobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
n-Propylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Chlorotoluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
4-Chlorotoluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,3,5-Trimethylbenzene	0.078 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
tert-Butylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2,4-Trimethylbenzene	0.156 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
sec-Butylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
p-Isopropyltoluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
n-Butylbenzene	0.057 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2,4-Trichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Hexachlorobutadiene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Naphthalene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2,3-Trichlorobenzene	< 0.043 mg/Kg-dry	N	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Chloride	1490 mg/Kg-dry		EPA 300.0	53.7	05/07/10 15:03	05/08/10	HDP-CV
Formaldehyde	2.8 mg/Kg-dry	N	NIOSH 3500	1.0	05/14/10 9:20	05/14/10	LTW-CV
Percent Moisture	6.8 %		SM2540G		05/11/10 11:40	05/12/10	NFM-SA

REMARKS:

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- Sample was received past holding time. Κ
- Value above calibration range but within annually verified linear range L
- Parameter is not NELAC certified Ν
- Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	5/17/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10050721

PAGE: 4 of 5

PO#:

TEST REPORT

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Pad

RECEIVED FOR LAB BY: DLM2 DATE: 05/06/2010 11:51

Page 4 of 5

RECEIVED FOR LAB BY: DLM2	DATE	=: U5/C	06/2010 11:51			Pa Pa	age 4 of 5
SAMPLE: Flowback Sand		Lab IE): 10050721-001B	Compo	site		
SAMPLED BY: SG	Sam	nple Time	9: 05/04/2010 17:50	81.00			
<u>Test</u>	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	6.82 %		Moisture Calc.	0.01	05/11/10 11:40	05/12/10	NFM-SA
Ammonia as N	118 mg/kg	U	Lachat	100	05/13/10 12:14	05/13/10	KAL-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	05/12/10 15:30	05/12/10	IC-SA
рН	6.29@23.6°C		EPA 9045C		05/12/10 14:35	05/12/10	NFM-SA
Phosphorus	120 mg/kg-dry		EPA 365.3	5	05/10/10 16:30	05/11/10	JP-SA
SAMPLE: Flowback Sand		Lab ID): 10050721-001C	Compo	site		
SAMPLED BY: SG	Sam	nple Time	e: 05/04/2010 17:50	SLOQ			
<u>Test</u>	Result		<u>Method</u>		Analysis Start	Analysis End	Analyst *
Ethylene glycol	37.0 mg/kg		Glycols by 8015	1.00	05/10/10 0:00	05/13/10	
Propylene glycol	< 0.50 mg/kg		Glycols by 8015	0.50	05/10/10 0:00	05/13/10	
Sample Note: Analysis performed	by Life Science						
SAMPLE: Flowback Sand		Lab IE): 10050721-001D	Compo	site		
SAMPLED BY: SG	Sam	nple Time	9: 05/04/2010 17:50	01.00			
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	6.31 mg/Kg Dry		EPA 9065	1.32	05/10/10 9:30	05/10/10	7 triary St
Sample Note: Analysis performed			_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		00,10,10		
SAMPLE: Flowback Sand		Lab ID): 10050721-001E	Compo	site		
SAMPLED BY: SG	Sam	ple Time	e: 05/04/2010 17:50	01.00			
<u>Test</u>	Result		<u>Method</u>	<u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	14600 mg/Kg		EPA 9071		05/10/10 8:00	05/10/10	

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time. K
- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Ammonia sample not distilled

Carrie M. Davis 5/17/2010 **MANAGER** DATE:

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10050721

10050721

5 of 5

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS:

337 Daniel Zenker Dr

Horseheads, NY 14845

PO#:

TEST REPORT

PWS ID#

WO#:

PAGE:

PHONE: FAX:

(607) 562-4000 (607) 562-4001

Pad

RECEIVED FOR LAB BY: DLM2

DATE: 05/06/2010 11:51

Page 5 of 5

Sample Note: Analysis performed by Microbac Lab- Erie

Lab ID: 10050721-001G Composite SAMPLE: TCLP Leachate of Flowback Sand SAMPLED BY: SG Sample Time: 05/04/2010 17:50 SLOQ **Analysis Start** Analysis End Analyst * Test Result Method < 0.0008 mg/L **EPA 7470A** 8000.0 05/12/10 7:10 05/12/10 KW-CV Mercury - TCLP extracted < 0.500 mg/L Arsenic - TCLP extracted **EPA 6010B** 0.500 05/11/10 11:50 05/14/10 GSR-CV Barium - TCLP extracted 12.4 mg/L **EPA 6010B** 10.00 05/11/10 11:50 05/14/10 GSR-CV Cadmium - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 05/11/10 11:50 05/14/10 **GSR-CV** < 0.500 mg/L **EPA 6010B** 0.500 05/11/10 11:50 05/14/10 Chromium - TCLP extracted **GSR-CV** Copper - TCLP extracted 0.403 mg/L **EPA 6010B** 0.100 05/11/10 11:50 05/14/10 GSR-CV Lead - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 05/11/10 11:50 05/14/10 GSR-CV Nickel - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 05/11/10 11:50 05/14/10 **GSR-CV** Selenium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 05/11/10 11:50 05/14/10 **GSR-CV** Silver - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 05/11/10 11:50 05/14/10 **GSR-CV** Zinc - TCLP extracted 0.852 mg/L **EPA 6010B** 0.200 05/11/10 11:50 05/14/10 **GSR-CV** Sample Note: The temperature of the extraction room exceeded the range of 23 ± 2°C

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Κ Sample was received past holding time.
- 1. Value above calibration range but within annually verified linear range
- Parameter is not NELAC certified Ν
- Ammonia sample not distilled

MANAGER	(mui M. / Sarles	DATE:	5/17/2010
	and M. Collection		and the second commence of the second commenc



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

each att	· legibly p tached sl	rinted in the spaces heet as Form 26R,	tely completed. All requi provided. If additional sp reference the item numb ts needs to match the date	ace is necessary, ide er and identify the	ntify Date	DEP (le Receive		NLY eneral Notes
General	Referenc	e 287.54						
Date Pre	pared/Re	vised Feb	oruary 11, 2011					
		SECTION A.	CLIENT (GENERATOR	R OF THE WASTE) I	NFORMA [*]	TION		11/2/2014
Compan	y Name			Astronomical distribution				
		USA Inc.						
If a Subs	sidiary, Na	ame of Parent Comp	any			EPA (Gener	ator ID#
	n Energy					N/A		
-	-	Address Line 1	C	ompany Mailing Addr	ess Line 2			
	wood Pla							
		s Last Line – City	State	Zip+4	Phone		_	Ext
Warrend			PA PA	15086	(724) 8	314-530		
	y Contact	t Last Name	First Name	MI		Suffix	(
Brown Municipa	olity		Dina	County				
Warrend				Allegheny				
Contact		Ext	Contact Email Address	Allegiterry				
(724) 81		LAC	dybrown@talismanusa.c	com				
		rated at the Compan	y Mailing Address (noted a			 _	Yes	⊠ No
			eration and storage. Wast		atural gas cor			
(01-076) L	well pad site located	at 3637 Fallbrook Road, Arn	nenia Township, Bradfo	ord County, PA	A. The w	aste i	s temporarily
stored on								
	***				•			
Municipa				- m cl	C+-) † ^	PA	
iniani and a series and a serie	anty	Armenia	County Bradfo		Sta	116		
			SECTION B. WAST					
Residu	ıal	Residu	SECTION B. WAST	E DESCRIPTION	Unit o	ıf		Time
Residu Waste C	ıal	Residu	SECTION B. WAST		Unit o Measu	of re		Time Frame
	ial ode	Residu	SECTION B. WAST ual Waste escription	E DESCRIPTION	Unit o Measu □ cu yd	ı f re □ gal		Frame
Waste C	ial ode	Residu Code D	SECTION B. WAST ual Waste escription Flow Back Sand)	Amount 36	Unit o Measu □ cu yd	of re		
Waste C	ode Fra	Residu Code D acing Fluid Waste (I	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P	Amount 36 ROBERTIES	Unit o Measu Cu yd	ı f re □ gal		Frame
Waste Co	ode Fra	Residu Code D acing Fluid Waste (I 8	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P to 9	Amount 36 ROBERTIES (based on analyses or	Unit o Measu Cu yd	ı f re □ gal		Frame
Waste Co	ode Fra	Residu Code D acing Fluid Waste (I 8	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me	Amount 36 ROPERTIES (based on analyses or thod 9095)	Unit o Measu Cu yd	ı f re □ gal		Frame
Waste Co	ode Fra	Residu Code D acing Fluid Waste (I 8	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909	Amount 36 ROPERTIES (based on analyses or thod 9095) 95)	Unit o Measu Cu yd	ı f re □ gal		Frame
804 a. p b. P	ode Fra oH Range Physical S	Residu Code D acing Fluid Waste (l 8 State	SECTION B. WAST ual Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909) Gas (ambient tempera	Amount 36 ROBERTIES (based on analyses or thod 9095) 95) ture & pressure)	Unit o Measu Cu yd Ib knowledge)	of re □ gal ⊠ ton		Frame
804 a. p b. P	ode Fra oH Range Physical S	Residu Code D acing Fluid Waste (I 8	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera Color Greyish Black	Amount 36 ROBERTIES (based on analyses or thod 9095) 95) ture & pressure) Od	Unit o Measu Cu yd Ib knowledge)	of re □ gal ⊠ ton		Frame
804 a. p b. P	ode Fra oH Range Physical S	Residu Code D acing Fluid Waste (l 8 State	SECTION B. WAST Lal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperators) Color Greyish Black Number of Solid or Liquid	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separatio	Unit o Measu Cu yd Ib knowledge)	of re □ gal ⊠ ton		Frame
804 a. p b. P	ode Fra oH Range Physical S	Residu Code D acing Fluid Waste (l 8 State	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera Color Greyish Black	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separatio	Unit o Measu Cu yd Ib knowledge)	of re □ gal ⊠ ton		Frame
804 a. p b. P	ode Fra oH Range Physical S	Residu Code D acing Fluid Waste (l 8 State	SECTION B. WAST Lal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 90s) Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separatio eparation. Sand	Unit o Measu Cu yd Ib knowledge)	of re □ gal ⊠ ton		Frame
a. pb. P	ode Fra OH Range Physical S Physical A	Residu Code D acing Fluid Waste (I 8 state Appearance	SECTION B. WAST Lal Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperators) Color Greyish Black Number of Solid or Liquid	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Od Phases of Separatio eparation. Sand	Unit of Measu Cu yd Ib knowledge) or Hydrocon One	of re ☐ gal ☑ ton	Yes	Frame
a. pb. P	ode Fra OH Range Physical S Physical A	Residu Code D acing Fluid Waste (I 8 state Appearance s of a detailed chemes, is attached.	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid Describe each phase of solid characterization of the	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Od Phases of Separatio eparation. Sand SIS ATTACHMENTS waste, as described	Unit of Measu Cu yd Ib knowledge) or Hydrocon One	earbon	Yes	One Time No
a. p b. P c. P a. T in b. A c. T	Physical A The results struction detailed The quality	Residu Code D acing Fluid Waste (I 8 state Appearance s of a detailed chemes, is attached. description of the w	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid Describe each phase of Solid Sandal Sand	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separatio eparation. Sand SIS ATTACHMENTS waste, as described attached.	Unit of Measu	earbon		Frame One Time
a. p b. P c. P a. T ir b. A c. T at	Physical A The results Instruction A detailed The quality Ittached.	Residu Code D acing Fluid Waste (I 8 state Appearance s of a detailed chemes, is attached, description of the way assurance/quality	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Method 909) Gas (ambient temperated of Solid or Liquid Describe each phase of solid characterization of the state sampling method is a control procedures employed.	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Od Phases of Separatio eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(Unit of Measu	earbon	Yes Yes Yes	No No No
a. p b. P c. P a. T ir b. A c. T ar d. T	Physical A The results of the detailed of the quality ttached. The results of the detailed of the quality ttached. The results of the results of the tesults	Residu Code D acing Fluid Waste (I 8 state s of a detailed chem as, is attached. description of the w y assurance/quality of the hazardous w	SECTION B. WAST Lial Waste escription Flow Back Sand) 1. GENERAL P to 9 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperated of Solid or Liquid Describe each phase of solid characterization of the state sampling method is a	Amount 36 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Od Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(ched.	Unit of Measu or Laboration on	earbon	Yes	One Time One No

2540-PM-BWM0347 Rev. 1/2011

	3.	PROCESS DESCRIPTION & S	CHEMATIC ATTAC	CHMENTS	a partir de la compa		
а.	A detailed description of the the waste, as specified in the		on control proce	esses producing	⊠ Yes	☐ No	
b.	A schematic of the manufacture as specified in the instruction		processes prod	ducing the waste,	X Yes	☐ No	
c.	If portions of the information a confidentiality claim, as des			n for Yes	□ No	⊠ N/A	
SECTION C. MANAGEMENT OF RESIDUAL WASTE							
	The second secon	1. PROCESSING OR DISP	SAL FACILITY(IE	ES)			
The ar	ea below (ad.) will accommod	ate the identification of two	facilities. Attach	n additional sheets	if necessary.		
a.	Solid waste permit number(s) 100361	for processing or disposal f	acility being util	lized.			
b.	Facility Name	McKean County Landfill					
	Address Line 1	19 Ness Lane					
	Address Line 1			· · · · · · · · · · · · · · · · · · ·	<u> </u>		
	Address City State ZIP	Kane	PA	16735			
	Municipality	Kane	County	McKean			
c.	Facility Contact Name	Mike Manderfeld					
	Title	General Manager					
	Phone	814-778-9931 E	mail Address	manderfeld@gm	ail.com		
d.	Volume of waste shipped to p 36	cu yd 🔲 gal 📋	lb 🛭 tor	n (check one)		
a.	Solid waste permit number(s)	for processing or disposal f	acility being util	lized.			
b.	Facility Name						
	Address Line 1						
	Address Line 1	·····					
	Address City State ZIP		0				
	Municipality		County				
C.	Facility Contact Name						
	Title		· · · · · · · · · · · · · · · · · · ·				
	Phone		mail Address				
d.	Volume of waste shipped to p	rocessing or disposal facility cu yd gal	y in the previous Ib tor)		
Marie Commission Commi		and the second of the second o		· ·			
		2. Benefici	AL USE		7-10 PM		
a.	Has the waste been approved		AL USE	•	Yes	⊠ No	
a.	Has the waste been approved If "Yes", list the general perm	for beneficial use?			Yes	⊠ No	
a. b.	• •	for beneficial use? it number or approval numbe			☐ Yes	⊠ No	

			SECTION D. CERTIFICATION
Reportain know	rt and all attached docu ning the information, I v ledge. I understand that	ments /erify the s	have personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Checl	k the following, if applicat	ole:	
	I certify the information and has not chan		red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not chan	•	red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information for the year and h	-	ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina l	Brown		
Signa	ture	C	Non Date $2(25/4)$

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Work Order: 10123073

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Dina Brown

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr ADDRESS:

Horseheads, NY 14845

WO#:

10123073

PAGE:

1 of 1

PO#:

Completions

PWS ID#

PHONE:

· (607) 562-4000

FAX:

(607) 562-4001

TEST REPORT

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RECEIVED FOR LAB BY: SCP

DATE: 12/20/2010 11:56

Page 1 of 1

SAMPLE: TCLP Leachate of Flowbac	k Sand	Lab IC): 10123073-001G	Compo	site		
SAMPLED BY: LS	· San	nple Time	e: 12/19/2010 18:00	21.00			
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L		EPA 7470A	8000.0	12/20/10 11:30	12/21/10	KW-CV
Aluminum - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Antimony - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Arsenic - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Barlum - TCLP extracted	13.8 mg/L	L	EPA 6010B	10.00	12/21/10 11:30	12/21/10	GSR-CV
Beryllium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Boron - TCLP extracted	< 1.25 mg/L		EPA 6010B	1.25	12/21/10 11:30	12/21/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L		EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	16.0 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.216 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L		EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L		EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

Value above calibration range but within annually verified linear range

MANAGER	Carry	i M. Davis

DATE:

12/22/2010

CHAIN OF CUSTODY Talisman / UEG 40 ARE SPECIAL DETECTION LIMITS W/O#: 10123073 geowetlands@aol.com NEEDED: YES / ZNO REFRIGERATE SAMPLES RESULTS ARE BEING USED FOR: IFYES, PLEASE ATTACH AFTER COLLECTION NYDEC PADEP DRINKING WATER SLUDGE ИООТИ IS A QC PACKAGE NEEDED? GROUND WATER SO SOIL SURFACE WATER HZ HAZARDOUS Dina Brown LANDFILL YES 7 NO TRANSPORT WW WASTE WATER OTHER 724 8/4 5321 DEIONIZED WATER DI DISTILLED WATER PERSONAL OTHER IFYES, PLEASE ATTACH REQUIREMENTS TO SAMPLETYPE, GRAB/COMPOSITE F **LABORATORY** HYDROCHLORIC ACID OH SODIUM HYDROXIDE 724 814 3301 SULFURIC ACID ASCORBIC ACID IN COOLER BILL TO: Talisman NITRIC ACID ACETIC ACID WITH ICE SO₃ SODIUM SULFITE NH. AMMONIUM CHLORIDE Thio SODIUM THIOSULFATE ZN ZINC ACETATE MERCURIC CHLORIDE PO# COMPLETIONS SAMPLE MATRIX Please fill out all An incomplete chain of custody may delay the applicable areas processing of your sample(s). completely CONTAINER SAMPLING POINT ANALYSIS TO BE PERFORMED LAB USE ONLY (PER CONTAINER) ocine service Flowback Sand TPH, pH, Free Liquids, % Moisture 604 Chlorides Sodium Bromine De de la come de la company TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hq, Se 3 G- 64 COTS Ag, Cu, Zn, Ni, + Oxtra lie Or pressib Alcohols, Glycols, Formaldehyde Стры 5 EPA 8260 Total Phosphorus, Total Phonolics of GEORGE STATES Ammonia Nitrogen 24 HOUR TURNAROUND 10 DAY TURNAROUND LAB USE ONLY -AE USE ONLY DEGIVERED BY CLUAR TEMPERATURE UPON RECEIPT CO ARRIVALION ICE YAN) RECEIVED BY: RELINQUISHED BY: DATE: TIME: 121/9/10 ク'30 RELINQUISHED BY: TIME: RECEIVED BY: TIME: RELINQUISHED BY: DATE: TIME: RECEIVED BY: DATE: 12/20/10 Ad Graphics Printing 570-888-0685

PAGE 1 OF 1



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed o	his form must be fully and accurately completed. All required information must ped or legibly printed in the spaces provided. If additional space is necessary, iden ach attached sheet as Form 26R, reference the item number and identify the crepared. The date on attached sheets needs to match the date noted below. eneral Reference 287.54					USE ONLY ed & General Notes
Genera	al Refe	rence 287.54				
Date P	repared	d/Revised	February 11, 2011			
11		SECTION	A. CLIENT (GENERATO	R OF THE WASTE) I	NFORMATION	
Compa	any Nar	ne				
		ergy USA Inc.				
		y, Name of Parent C	Company			Generator ID#
lalism	an Ene	ergy Inc.		O	N/A	
		ling Address Line 1 d Place	•	Company Mailing Addre	ess Line 2	
		dress Last Line – Ci	ty State	Zip+4	Phone	Ext
Warre		aress Last Line – Or	PA	15086	(724) 814-530	
		ntact Last Name	First Name	MI	Suffi	
Brown	-		Dina			
Munici				County		
Warre				Allegheny		
Contac			Contact Email Address			
(724) 8			dybrown@talismanusa		[V NA NA
			mpany Mailing Address (noted e generation and storage. <u>Was</u>		atural ass samplation	Yes No
II NO ,			ated at 2871 Fallbrook Road, Ar			
stored		1) L Hon pad one led	ated at 2011 and continuation	morna Tomnomp, Braaro	ra county, 17th 1110 t	vacto lo temporamy
Munici			<u> </u>			
CHOCKER CHEST	pality	Armenia	County Brad		State	PA
			SECTION B. WAS			
Resid	dual	R	SECTION B. WAS esidual Waste	TE DESCRIPTION	Unit of	Time
Resid Waste	dual	R Co	SECTION B. WAS esidual Waste de Description	TE DESCRIPTION Amount	Unit of Measure	
Resid	dual	R Co	SECTION B. WAS esidual Waste	TE DESCRIPTION	Unit of Measure □ cu yd □ gal	Time Frame
Resid Waste	dual	R Co	SECTION B. WAS esidual Waste de Description	Amount 857	Unit of Measure ☐ cu yd ☐ gal	Time
Resid Waste	dual	R Co Fracing Fluid Wa	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand)	Amount 857	Unit of Measure Cu yd Gal Ib Ston	Time Frame
Resid Waste 804	dual Code pH Ra	R Co Fracing Fluid Wa	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M	Amount 857 PROPERTIES (based on analyses or lethod 9095)	Unit of Measure Cu yd Gal Ib Ston	Time Frame
Resid Waste 804	dual Code pH Ra	R Co Fracing Fluid Wa	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9)	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095)	Unit of Measure Cu yd Gal Ib Ston	Time Frame
Resid Waste 804	dual Code pH Ra Physic	R Co Fracing Fluid Wa nge cal State	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GEÑÉRAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 90 Gas (ambient temper	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure)	Unit of Measure cu yd gal b don knowledge)	Time Frame
Resid Waste 804	dual Code pH Ra Physic	R Co Fracing Fluid Wa	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Od	Unit of Measure cu yd gal b ton knowledge) Hydrocarbon	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	R Co Fracing Fluid Wa nge cal State	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black Number of Solid or Lique	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation	Unit of Measure cu yd gal b ton knowledge) Hydrocarbon	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	R Co Fracing Fluid Wa nge cal State	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation	Unit of Measure cu yd gal b ton knowledge) Hydrocarbon	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	R Co Fracing Fluid Wa nge cal State	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black Number of Solid or Liqu Describe each phase of	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation Sand	Unit of Measure cu yd gal b ton knowledge) Hydrocarbon	Time Frame
Resid Waste 804 a. b.	dual Code pH Ra Physic	R Co Fracing Fluid Wa nge cal State	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black Number of Solid or Liqu Describe each phase of	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation Sand VISIS ATTACHMENTS	Unit of Measure cu yd gal b ton knowledge) Hydrocarbon or One	Time Frame One Time
Resid Waste 804 a. b.	dual Code pH Ra Physic	R Co Fracing Fluid Wa nge cal State	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black Number of Solid or Liqu Describe each phase of	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation Sand VISIS ATTACHMENTS	Unit of Measure cu yd gal b ton knowledge) Hydrocarbon One	Time Frame
Resid Waste 804 a. b.	pH Ra Physic Physic	R Co Fracing Fluid Wa nge cal State cal Appearance sults of a detailed octions, is attached.	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black Number of Solid or Liqu Describe each phase of	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation Separation. Sand VISIS ATTACHMENTS he waste, as described	Unit of Measure cu yd gal b ton knowledge) Hydrocarbon or One	Time Frame One Time
Resid Waste 804 a. b.	pH Ra Physic Physic The re instruc A deta	Fracing Fluid Warninge cal State sults of a detailed cotions, is attached. iled description of tallity assurance/qual	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black Number of Solid or Liqu Describe each phase of	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation separation. Sand YSIS ATTACHMENTS ne waste, as described attached.	Unit of Measure cu yd gal bloom ton knowledge) The Hydrocarbon One	Time Frame One Time Yes No
Resid Waste 804 a. b.	pH Ra Physic The re instruct A deta The quattach	Fracing Fluid Warninge cal State sults of a detailed octions, is attached. iled description of tallity assurance/quied.	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 9) Gas (ambient temper Color Greyish Black Number of Solid or Lique Describe each phase of 2. CHEMICAL ANALY chemical characterization of the the waste sampling method is ality control procedures employed	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation separation. Sand VSIS ATTACHMENTS ne waste, as described attached. oyed by the laboratory(Unit of Measure cu yd gal b ton knowledge) Hydrocarbon One	Time Frame One Time Yes No Yes No Yes No
Resid Waste 804 a. b.	pH Ra Physic Physic The re instruc A deta The qu attach The re	R Co Fracing Fluid Wa nge cal State sults of a detailed octions, is attached. iled description of the callity assurance/quied. sults of the hazardo	SECTION B. WAS esidual Waste de Description ste (Flow Back Sand) 1. GENERAL 8.59 to Liquid Waste (EPA M Solid (EPA Method 90 Gas (ambient temper Color Greyish Black Number of Solid or Lique Describe each phase of 2. CHEMICAL ANALY chemical characterization of the	Amount 857 PROPERTIES (based on analyses or lethod 9095) 095) rature & pressure) k Odid Phases of Separation separation. Sand YSIS ATTACHMENTS ne waste, as described attached. oyed by the laboratory(ached.	Unit of Measure cu yd gal bloom ton knowledge) The Hydrocarbon One	Time Frame One Time Yes No No

2540-PM-BWM0347 Rev. 1/2011

		PROCESS DESCRIPTION & SCI	there in the part of the transfer had become that the territory of the con-	The state of the s			250	
a.	A detailed description of the the waste, as specified in the		n control processe	es producing	⊠ Yes	☐ No		
b.	A schematic of the manufacture as specified in the instruction		processes produc	ing the waste,	Yes	☐ No		
C.	If portions of the information a confidentiality claim, as des			or	☐ No	⊠ N/A		
SECTION C. MANAGEMENT OF RESIDUAL WASTE								
1. Processing or Disposal Facility(ies)								
The ar	ea below (ad.) will accommod	ate the identification of two fa	cilities. Attach ad	lditional sheets i	if necessary	y.		
a.	Solid waste permit number(s) 100361	for processing or disposal fa	cility being utilized	d.				
b.	Facility Name	McKean County Landfill						
	Address Line 1	19 Ness Lane						
	Address Line 1			10705				
	Address City State ZIP	Kane	PA	16735				
	Municipality	Kane	County M	1cKean				
c.	Facility Contact Name	Mike Manderfeld						
	Title	General Manager	. H. A. J. J	1 (110	11			
	Phone		nail Address m	nanderfeld@gm:	ail.com			
d. Volume of waste shipped to processing or disposal facility in the previous year.								
u. 	857	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
a.	857 Solid waste permit number(s)	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
	857 Solid waste permit number(s) Facility Name	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
a.	Solid waste permit number(s) Facility Name Address Line 1	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
a.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	cu yd 🔲 gal 🔲	b 🛚 ton	(check one)				
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd gal gal for processing or disposal fa	cility being utilized	(check one)				
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal sal far for processing or disposal far	cility being utilized County aail Address	(check one)				
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd	County County In the previous ye ton	(check one)				
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd	County County In the previous ye ton	(check one) d.				
a. b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd	County Cail Address in the previous ye b	(check one) d.	Yes	No		
a. b. c. d.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p Has the waste been approved If "Yes", list the general perm	cu yd gal for processing or disposal factor processing or disposal facility cu yd gal for beneficial use?	County Cail Address in the previous ye b	(check one) d.		No No		
a. b. c. d.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd gal for processing or disposal factor processing or disposal facility cu yd gal for beneficial use? it number or approval number used in the previous year.	County Cail Address in the previous ye b	(check one) d.		No		

ī.			SECTION D. CERTIFICATION
Repor obtain knowl	t and all attached docu ling the information, I v edge. I understand that	ments erify the s	have personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check	the following, if applicat	le:	
	I certify the information and has not chan	-	red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not chan		red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
·	I certify the information if for the year and h	•	ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina E	Brown		
Signat	ture	C	Date $2/25/($

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10100732

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10100732

PAGE:

1 of 4

PO#:

PHONE: FAX:

(607) 731-0145 (607) 562-4001

TEST REPORT

PWS ID#

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	Lab I	D: 10100732-001A	Сотро	site		
Sam	nple Tim	e: 10/04/2010 17:00	01.00			
Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
13 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
311 mg/Kg-dry		EPA 6010B	57.0	10/07/10 12:30	10/08/10	GSR-CV
4.60 mg/kg	ΚN	HACH 8167	0.05	10/07/10 17:30	10/07/10	SMH-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.225 mg/Kg-dry		EPA 8260B	0.225	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
	Result 13 mg/Kg < 10 mg/Kg 311 mg/Kg-dry < 0.045 mg/Kg-dry	Result 13 mg/Kg N < 10 mg/Kg Ory 4.60 mg/Kg Ory < 0.045 mg/Kg-dry < 0.045 mg/Kg-dry	13 mg/Kg N Alcohols by FID < 10 mg/Kg N Alcohols by FID 311 mg/Kg-dry EPA 6010B < 0.045 mg/Kg-dry EPA 8260B < 0.045 mg/Kg-dry EPA 8260B	Sample Time: 10/04/2010 17:00 Result Method 13 mg/Kg N Alcohols by FID 10 < 10 mg/Kg	Sample Time: 10/04/2010 17:00 Result Method Analysis Start 13 mg/Kg N Alcohols by FID 10 10/11/10 11:02 < 10 mg/Kg	Result Method Analysis Start Analysis End 13 mg/Kg N Alcohols by FID 10 10/11/10 11:02 10/11/10 < 10 mg/Kg

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; ŠA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time. K
- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- U Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	10/12/2010	
	and M. Corp.			

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10100732

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

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DATE: 10/06/2010 9:55

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ECEIVED FOR LAB BT. DLIVIZ	DATE	. 10	00/2010 9:55			1	age 2 of 4
Dibromomethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Bromodichloromethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
cis-1,3-Dichloropropene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Toluene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
trans-1,3-Dichloropropene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1,2-Trichloroethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Tetrachloroethene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Dibromochloromethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2-Dibromoethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Chlorobenzene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Ethylbenzene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
m,p-Xylene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
o-Xylene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Xylenes, Total	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Bromoform	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2,3-Trichloropropane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,3-Dichlorobenzene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,4-Dichlorobenzene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2-Dichlorobenzene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Chloride	518 mg/Kg-dry	Q	EPA 300.0	54.0	10/07/10 14:51	10/08/10	HDP-CV
Formaldehyde	8.1 mg/Kg-dry	N	NIOSH 3500	1.0	10/11/10 8:15	10/11/10	LTW-CV
Percent Moisture	11.2 %		SM2540G		10/06/10 10:30	10/07/10	NFM-SA

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Value above calibration range but within annually verified linear range
- Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- Ammonia sample not distilled

	//		
MANAGER	Carri M. Davis	DATE:	10/12/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

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DATE: 10/06/2010 9:55

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SAMPLE: Flowback Sand		Lah II	D: 10100732-001B	Compo	nsite		
SAMPLED BY: SG	San		e: 10/04/2010 17:00	Oblinpe	55105		
SAMI LED DT. 00	Oal.	npio min	6. 10/04/2010 17:00	SLOQ			
<u>Test</u>	Result		Method		Analysis Start	Analysis End	Analyst *
Moisture	11.2 %		Moisture Calc.	0.01	10/06/10 10:30	10/07/10	NFM-SA
Ammonia as N	34.8 mg/kg-dry	U	Lachat	11.3	10/07/10 10:36	10/07/10	JP-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	10/08/10 11:00	10/08/10	IC-SA
рH	8.59@20.5°C		EPA 9045C		10/06/10 16:30	10/06/10	NFM-SA
Phosphorus	32 mg/kg-dry		EPA 365.3	6	10/09/10 10:00	10/11/10	JP-SA
SAMPLE: Flowback Sand		Lab II	D: 10100732-001C	Compo	osite		
SAMPLED BY: SG	San	nple Time	e: 10/04/2010 17:00				
				SLOQ			
<u>Test</u>	Result		<u>Method</u>		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg		Glycols	10.00	10/08/10 0:00	10/08/10	
Propylene glycol	< 10.00 mg/Kg		Glycols	10.00	10/08/10 0:00	10/08/10	
Sample Note: Analysis performe	d by Summit Environmen	tal Techr	nologies, Inc.				
SAMPLE: Flowback Sand		Lab II	D: 10100732-001D	Compo	osite		· · · · · · · · · · · · · · · · · · ·
SAMPLED BY: SG	San	ple Time	e: 10/04/2010 17:00				
				SLOQ			
<u>Test</u>	Result		Method		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	8.76 mg/Kg Dry		EPA 9065	1.41	10/08/10 8:00	10/08/10	
Sample Note: Analysis performe	d by QC lab						

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- Sample was received past holding time.
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- N Parameter is not NELAC certified
- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	10/12/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10100732

Page 4 of 4

Phone: (570) 888-0169 Fax: (570) 888-0717

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PAGE: 4 of 4

10100732

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PHONE:

(607) 731-0145 (607) 562-4001

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RECEIVED FOR LAB BY: DLM2

SAMPLE: Flowback Sand SAMPLED BY: SG

DATE: 10/06/2010 9:55

Composite

Sample Time: 10/04/2010 17:00

SLOQ

Lab ID: 10100732-001E

Analysis Start Analysis End Analyst * Result Method EPA 9071 10/08/10 14:00 10/08/10 Total Petroleum Hydrocarbons 400 mg/Kg

Sample Note: Analysis performed by Microbac -Erie

SAMPLE: TCLP Leachate of Flowb	ack Sand	Lab II	D: 10100732-001G	Compo	site		
SAMPLED BY: SG	Sam	ple Time	e: 10/07/2010 9:15				
<u>Test</u>	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L		EPA 7470A	8000.0	10/08/10 8:40	10/11/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	10/08/10 12:30	10/08/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	L	EPA 6010B	10.00	10/08/10 12:30	10/08/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	10/08/10 12:30	10/08/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	10/08/10 12:30	10/08/10	GSR-CV
Copper - TCLP extracted	0.115 mg/L		EPA 6010B	0.100	10/08/10 12:30	10/08/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	10/08/10 12:30	10/08/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	10/08/10 12:30	10/08/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	10/08/10 12:30	10/08/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	10/08/10 12:30	10/08/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L		EPA 6010B	0.200	10/08/10 12:30	10/08/10	GSR-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Value above calibration range but within annually verified linear range
- Parameter is not NELAC certified Ν
- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- Ammonia sample not distilled IJ

MANAGER	ani M. Davis	DATE:	<i>10/12/2010</i>

CHAIN OF CUSTODY					•		, 1	PAGE 1 OF 1
REPORT TO: Talisman / UEG					2	<u>.</u>	-	
geowetlands@aol.com					-	•	W/O#: 10100732	ARE SPECIAL DETECTION LIMITS
twollin@rallysolutions.ca	REFE	UGER	ATE SA	AMP1 F	S			NEEDED: YES / NO
two miles any solution is a			LLECT		-9	/bv		IF YES, PLEASE ATTACH
COUTACT	1					G	GROUND WATER SO SOIL	IS A QC PACKAGE NEEDED?
CONTACT Steve Gridley	Т	RANS	PORT		1,	/ SV W	WASTE WATER OTHER	YES MO
PH# 607-731-0145		T($\perp \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$	DE	DEIONIZED WATER DI DISTILLED WATER PERSONAL OTHER	IFYES, PLEASE ATTACH REQUIREMENTS
FAX#	1	N CO	ATORY		1	15	/ /H HYDROCHLORIC ACID OH SODIUM HYDROXIDE / S SULFURIC ACID AS ASCORBIC ACID //	
BILL TO: Talisman	1	WITH		,	/ /	PRES MINING COMPOSITE	N NITRIC ACID AC ACETIC ACID SO, SODIUM SULFITE NH, AMMONIUM CHLORIDE	Please fill out all applicable areas completely LAB USE ONLY
	<u> </u>			/		્રેજ/	SO, SODIUM SULFITE NH, AMMONIUM CHLORIDE Thio SODIUM THIOSULFATE ZN ZINC ACETATE NONE Hg MERCURIC CHLORIDE An Incomplete chain of custody may delay the processing of your sample(s). ANALYSIS TO BE PERFORMED (PER CONTAINER)) 8
PO# COMPLETIONS			/ 🖇	1	/ g	3/0	- NONE Hg MERCURIC CHLORIDE	Please fill out at 112
Page Ton Took PTION	,	TIME SAMPLED	SAMPLING SAMPLING	Sales In the Park	1		An incomplete chain of custody may delay the processing of your sample(s). ANALYSIS TO BE PERFORMED (PER CONTAINER)	applicable areas
SAMPLER SIGNATURE / AFFILIATION /3	1 /.	\$ /	\$ /	Ž /	1 / W	\$/	biographia of April positive (a)	completely
CONTAINER SAMPLING POINT	1/5	î/\\\] / §				ANALYSIS TO BE PERFORMED	
	14	<u> </u>	/ ³	<u>_</u>			(PER CONTAINER)	LAB USE ONLY
1 Flowback Sand	10-4	1700	50	Ċ	\$6-	N	TPH, pH, Free Liquids, % Moisture	-6014-6
2							Chlorides, Sodium, Bromine	
3							TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se	
4 A-Na, Cl, Bromine, 82	60	Alc	oho	f	om	aldeh	Ag, Cu, Zn, Ni	
5 B of Freeliquid, GON	oisty	MQ.	Ph	s. N	113		Alcohols, Glycols, Formaldehyde	
6 C. Glucal		-					EPA 8260	
7 D. Pheno							Total Phosphorus, Total Phenolics	
8 E TPH							Ammonia - Nitrogen	
9 F. T. Sample					<u> </u>			
10 B TCLP Metalogary	Ni.	20			<u> </u>		HOUR TURNAROUND	
11							DAY TURNAROUND	金字字数字。金额写
LAB USE ONLY COURS OF STATE OF							SG TEMPERATURE UPON RECEIPT	DUE 10/11/10
DELIVERED BY		'-) :		.	3.3	. 5.		_°C ARRIVAL ON CE Y /N
RELINOUISHED BX;		7/	DATE:	610	,, 1	ΓΙΜΕ: (84 RECEIVED BY: 1 - Mella	DATE: 1014110 TIME 9 35
RELINQUISHED BY:			ATE:	,	7 17	TIME:	RECEIVED BY:	DATE: TIME:
RELINQUISHED BY:		D	ATE:	<u>'</u>	╁╁	IME:	RECEĮVED BY:	DATE: , TIME:



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed each	or legib attache	oly printed in the spaces d sheet as Form 26R,	ately completed. All requisions provided. If additional sportering reference the item numbers needs to match the date	ace is necessary, ider er and identify the o	ntify Date Receive	JSE ONLY ed & General Notes
Genera	al Refe	rence 287.54				
Date P	repare	d/Revised Fe	bruary 11, 2011			
		SECTION A.	CLIENT (GENERATOR	ROF THE WASTE)	NFORMATION	
	any Nar					
		ergy USA Inc.				
		y, Name of Parent Comp	pany			Generator ID#
		ergy Inc. ling Address Line 1		ompany Mailing Addre	N/A	
		d Place	C.	ompany Maining Addit	:55 Lille Z	
		dress Last Line – City	State	Zip+4	Phone	Ext
Warre		•	PA	15086	(724) 814-530	00
-	-	ntact Last Name	First Name	MI	Suffix	<
Brown			Dina			
Munici Warre				County Allegheny		
	t Phon	e Ext	Contact Email Address	Rilegiletry		
	314-53		dybrown@talismanusa.c	om		
			ny Mailing Address (noted a			Yes No
If 'No'.			neration and storage. Wast			
1			ocated at 177 Mud Creek Roa	ad, Troy Township, Brad	dford County, PA. The	e waste is
tempor	ariiy sto	red onsite.				
Munici	pality	Troy	County Bradfo	ord	State	PA
			SECTION B. WAST	managada kana a kata Kabanda da ka		
Resi	dual	Resid	ual Waste		Unit of	Time
Waste	Code	Code D		Amount	Measure	Frame
804			Description	Amount	Measure	rrante
			-	243	☐ cu yd ☐ gal	
		Fracing Fluid Waste (Flow Back Sand)	243		One Time
a.	nH Ra	Fracing Fluid Waste (Flow Back Sand) 1. GENERAL P	243 ROPERTIES	☐ cu yd ☐ gal ☐ lb ☑ ton	
a.	pH Ra	Fracing Fluid Waste (Flow Back Sand) 1. GENERAL P	243 ROPERTIES (based on analyses or	☐ cu yd ☐ gal ☐ lb ☑ ton	
a. b.		Fracing Fluid Waste (Flow Back Sand) 1. GENERAL P 29 to Liquid Waste (EPA Me	243 ROPERTIES (based on analyses or thod 9095)	☐ cu yd ☐ gal ☐ lb ☑ ton	
		Fracing Fluid Waste (Flow Back Sand) 1. GENERAL P	ROPERTIES (based on analyses or thod 9095)	☐ cu yd ☐ gal ☐ lb ☑ ton	
	Physic	Fracing Fluid Waste (Flow Back Sand) 1. GENERAL P 29 to Liquid Waste (EPA Me Solid (EPA Method 90)	ROPERTIES (based on analyses or thod 9095)	□ cu yd □ gal □ lb □ ton knowledge)	
b.	Physic	Fracing Fluid Waste (nge 7.2 cal State	Flow Back Sand) 1. GENERAL P 29 to Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Od	cu yd gal lb ston knowledge) Pr Hydrocarbon	
b.	Physic	Fracing Fluid Waste (nge 7.2 cal State	Flow Back Sand) 1. GENERAL P 29 to Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera Color Greyish Black	ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation	cu yd gal lb ston knowledge) Pr Hydrocarbon	
b.	Physic	Fracing Fluid Waste (nge 7.2 cal State	Flow Back Sand) 1. GENERAL P 29 to Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	cu yd gal lb ston knowledge) Pr Hydrocarbon	
b. c.	Physic Physic	Fracing Fluid Waste (nge 7.2 cal State cal Appearance	The state of the s	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	cu yd gal lb ton knowledge) Pr Hydrocarbon One	One Time
b.	Physic Physic The re	Fracing Fluid Waste (nge 7.2 cal State cal Appearance	Flow Back Sand) 1. GENERAL P 29 to Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of s	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	cu yd gal lb ton knowledge) Pr Hydrocarbon One	
b. c.	Physic Physic The reinstruc	Fracing Fluid Waste (nge 7.2 cal State cal Appearance sults of a detailed chemotions, is attached.	The state of the s	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described	cu yd gal lb ton knowledge) Pr Hydrocarbon One	One Time
b. c. a.	Physical Phy	Fracing Fluid Waste (nge 7.2 cal State cal Appearance sults of a detailed chemotions, is attached. iled description of the vality assurance/quality	The Back Sand) 1. GENERAL Pace 1. GENERAL Pace 1. GENERAL Pace 2. CHEMICAL ANALYStical Characterization of the series of series and series are	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	cu yd gal lb Ston knowledge) Pr Hydrocarbon One	One Time Yes No
b. c. a. b. c.	Physical Phy	Fracing Fluid Waste (nge 7.2 cal State cal Appearance sults of a detailed chemotions, is attached. iled description of the vality assurance/quality ed.	The Back Sand) 1. GENERAL Pace 1. GENERAL Pace 1. GENERAL Pace 2. Liquid Waste (EPA Mexico Solid (EPA Method 90% Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of solid characterization of the waste sampling method is a control procedures employed.	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(cu yd gal lb ton knowledge) ref Hydrocarbon n One in the ies) is	Yes No Yes No Yes No
b. c. a. b.	Physical Phy	Fracing Fluid Waste (nge 7.2 cal State cal Appearance sults of a detailed chemotions, is attached, illed description of the vality assurance/quality ed, sults of the hazardous vality of the haz	The Back Sand) 1. GENERAL Pace 1. GENERAL Pace 1. GENERAL Pace 2. Liquid Waste (EPA Mexico Solid (EPA Method 90% Gas (ambient tempera Color Greyish Black Number of Solid or Liquid Describe each phase of solid characterization of the waste sampling method is a solid pace 1. GENERAL ANALYS of the Back Pace 2. CHEMICAL	243 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. yed by the laboratory(ched.	cu yd gal lb ston knowledge) Pr Hydrocarbon One In the sies) is	Yes No

3.3	3.	PROCESS DESCRIPTION &	SCHEMATIC ATTACHMI	ENTS .							
a.	A detailed description of the r the waste, as specified in the		ution control processe	s producing	⊠ Yes	☐ No					
b.	A schematic of the manufactu as specified in the instruction		rol processes produci	ng the waste,	⊠ Yes	☐ No					
c.	If portions of the information s a confidentiality claim, as des			r 🗌 Yes	☐ No	⊠ N/A					
SECTION C. MANAGEMENT OF RESIDUAL WASTE											
		1. Processing or Dis									
The ar	ea below (ad.) will accommod	ate the identification of tw	o facilities. Attach add	ditional sheets	if necessary.						
a.	Solid waste permit number(s) 100361	for processing or dispose	al facility being utilized	•							
b.	Facility Name	McKean County Landfil	<u> </u>								
	Address Line 1	19 Ness Lane									
	Address Line 1										
	Address City State ZIP	Kane	PA	16735							
	Municipality	Kane	County Me	cKean							
C.	Facility Contact Name	Mike Manderfeld									
	Title	General Manager									
	Phone	814-778-9931	Email Address ma	anderfeld@gm	ail.com						
d.	Volume of waste shipped to p 243	cu yd	☐ Ib ⊠ ton	(check one)							
a.	Solid waste permit number(s)	for processing or disposa	al facility being utilized	•							
b.	Facility Name										
	Address Line 1										
	Address Line 1										
	Address City State ZIP										
	Municipality		County								
C.	Facility Contact Name										
	Title		F !! A ! !								
	Phone		Email Address								
d.	Volume of waste shipped to p	· — · –									
		cu yd gal	lb ton	(check one)							
		2. Benefi	CIAL ÚSE								
a.	Has the waste been approved	for beneficial use?			Yes	⊠ No					
	If "Yes", list the general permi		nber.								
b.	Volume of waste beneficially u		— —			-					
	0 📙	cu yd 🔲 gal 📗	lb ton	(check one)							

			SECTION D. CERTIFICATION							
Repo obtain know	certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.									
Chec	k the following, if applicat	ole:								
\boxtimes	I certify the information in and has not changed.	require	ed in Section B-1, General Properties was supplied to the Department for the year 2009							
	Form Submitted:		Form 26R							
			Other (specify)							
	Date Submitted:									
\boxtimes	I certify the information and has not changed.	require	ed in Section B-2, Chemical Analysis was supplied to the Department for the year 2009							
	Form Submitted:		Form 26R							
			Other (specify)							
	Date Submitted:									
	I certify the information of the year and h	-	ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.							
	Form Submitted:		Form 26R							
			Other (specify)							
	Date Submitted:									
Name	of Responsible Official		Title Environmental Specialist							
Dina	Brown									
Signa	ture	5	$Date = \frac{2(25/4)}{2}$							

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030540

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10030540

PAGE: 1 of 4

PO#:

PWS ID#

TEST REPORT

PHONE:

FAX:

(607) 731-0145 (607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2 DATE: 03/03/2010 9:38

Page 1 of 4

			Compo	osite			
San	nple Time:	03/01/2010 14:00	81.00				
Result		<u>Method</u>	<u> </u>	Analysis Start	Analysis End	Analyst *	
<4.6 mg/kg	к	HACH 8167	0.05	03/12/10 13:32	03/12/10	TLB-CV	
3.7 %		SM2540G		03/09/10 12:30	03/10/10	NFM-SA	
540 mg/Kg-dry		EPA 1664A	180	03/12/10 13:50	03/15/10	DTG-CV	
	Lab ID:	10030540-001B	Composite				
San	nple Time:	03/01/2010 14:00					
Popult		Mothod	SLOQ	Analysis Start	Analysis End	Analyst *	
	u		104	•		KAL-SA	
	_		_				
			0.1		-	IC-SA	
						NFM-SA	
< 3 mg/kg		EPA 305.3	3	03/16/10 11:04	03/16/10	JP-SA	
	Lab ID:	10030540-001C	Composite				
Sarr	ple Time:	03/01/2010 14:00					
Popult		Mathad	SLOQ	Amelicale Otani	Amabada 5 ad	4	
			0.042			Analyst *	
						DN-CV	
* * *						DN-CV	
						DN-CV	
						DN-CV	
						DN-CV	
-						DN-CV	
						DN-CV	
						DN-CV	
0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV	
	Result <4.6 mg/kg 3.7 % 540 mg/Kg-dry San Result <104 mg/kg-dry <0.1 % 7.29@23.8°C <3 mg/kg	Result	<4.6 mg/kg K HACH 8167 3.7 % SM2540G 540 mg/Kg-dry EPA 1664A Lab ID: 10030540-001B Sample Time: 03/01/2010 14:00 Result Method < 104 mg/kg-dry	Sample Time: 03/01/2010 14:00 SLOQ	Sample Time: 03/01/2010 14:00 Result Method SLOQ 4.6 mg/kg K HACH 8167 0.05 03/12/10 13:32 3.7 % SM2540G 03/09/10 12:30 540 mg/Kg-dry EPA 1664A 180 03/12/10 13:50 Lab ID: 10030540-001B Composite Sample Time: 03/01/2010 14:00 Result Method Analysis Start < 104 mg/kg-dry	Result Method Analysis Start Analysis End	

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Value above calibration range but within annually verified linear range
- Ammonia sample not distilled

	// > .		
MANAGER	Carrie M. Davis	DATE: 3/17/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Phone: (570) 888-0169

Work Order: 10030540

Fax: (570) 888-0717

SEND DATA TO:

PHONE:

FAX:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10030540

PAGE:

2 of 4

PO#:

PW\$ ID#

TEST REPORT

(607) 731-0145

NTSW TCLP Metals/TPH/pH/%Moisture

(607) 562-4001

RECEIVED FOR LAB BY: DLM2	DATE: 03	3/03/2010 9:38			P	Page 2 of 4		
Benzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
Bromoform _.	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV		

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Value above calibration range but within annually verified linear range L
- U Ammonia sample not distilled

MANAGER	Carri	M. Davis	D	ATE:	3/17/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030540

Phone: (570) 888-0169 Fax: (570) 888-0717

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NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10030540

PAGE:

PWS ID#

3 of 4

PO#:

TEST REPORT

PHONE: FAX:

(607) 731-0145 (607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

Page 3 of 4

RECEIVED FOR LAB BY: DLM2 DATE: 03/03/2010 9:38 SAMPLE: ER Sand SH-1 Lab ID: 10030540-001D Composite

ALLOUS DOLLAR		200 101 100000-10-00 [[Southe	GII.O		
SAMPLE: FB Sand SH-1		Lab ID: 10030540-001F	Compo	eita		
Sample Note: Analysis perfor	med by Life Science					
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10	
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10	
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
SAMPLED BY: SG	Sampl	le Time: 03/01/2010 14:00				
SAMPLE: FB Sand SH-1		Lab ID: 10030540-001E	Compo	site		
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-CV
n-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Isobutanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
n-Propanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
t-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Isopropanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Ethanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Methanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Test	Result	<u>Method</u>	<u>JEJU</u>	Analysis Start	Analysis End	Analyst *
SAMPLED BY: SG	Samp	le Time: 03/01/2010 14:00	SLOQ			
SAMPLE: PB Sand SH-1	_	Lab ID: 10030540-001D	Compt	311E		

SAMPLED BY: SG

Sample Time: 03/01/2010 14:00

SLOQ

<u>Test</u> Phenolics, Total Recoverable

Result 11.3 dry mg/Kg Method **EPA 9065** **Analysis Start** 03/10/10 9:30 Analysis End Analyst * 03/10/10

Sample Note: Analysis performed by QC lab

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- U Ammonia sample not distilled

MANAGER	Carri	M. Davis	1	DATE:	3/17/2010	

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10030540

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME:

Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS:

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10030540

PAGE:

4 of 4

PO#:

PHONE: FAX:

(607) 731-0145

(607) 562-4001

TEST REPORT

PWS ID#

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 4 of 4

SAMPLE: TCLP Leachate of FB S	and SH-1	Lab II	D: 10030540-001H	Compo	site		
SAMPLED BY: SG	Sam	Sample Time: 03/01/2010 14:00					
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L		EPA 7470A	0.0008	03/11/10 8:30	03/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Barium - TCLP extracted	14,5 mg/L	L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Copper - TCLP extracted	0.410 mg/L		EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L		EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Value above calibration range but within annually verified linear range L
- Ammonia sample not distilled

	(' ha Dewin	DATE:	3/17/2010
MANAGER	Carri M. Oaks	DATE:	3/1//2010

CHAIN OF CUSTODY					В	enchmar	k i						_OF
REPORT TO: Tolisman				2	566 Pe	Easte nnsylvania Phone: (Av					CIAL DET	ECTION LIMITS
						Fax: (5	•	W/O#	<i>‡</i> : 10	0305	540	YES	/ (G)
			E SAMP	LES								LEASE AT	TACH
	AFTE	4 COLL	ECTION		DW	DRINKING W		SLUDGE	NYDOH	NXOFS	PEDEP	IS A QC PAC	KAGE NEEDED?
CONTACT Steve Gridley	TI	RANSP	ORT		GW SW WV	SURFACE WA	TER HZ	SOIL HAZARDOUS ER		LANDFILL_		YES	(NO)
PH# 607-731-0145		TO			DE	DEIONIZED W		DISTILLED WATER	R PERSONA	L OTHER	1	FYES, PLEASE AT	TACH REQUIREMENTS
FAX#	L .	BORAT	ORY		1	/ /H	HYDROCHLOR SULFURIC AC		ODIUM HYDE		VS ID#		
BILL TO: Talisman		N COOL WITH K	LEK CE	/ /		N SO ₃ Thio	NITRIC ACID SODIUM SULF	AC A TTE NH₄ A	CETIC ACID MMONIUM C	HLORIDE LO	cation		
PO# Completions		7	10/	' /,	§/.	<u> </u>	SODIUM THIO NONE		INC ACETATE IERCURIC CH		mple Point		
SAMPLER SIGNATURE AFFILIATION		TIME OF G	SAMPLE MATERING	ETYPE.	PAKES NUTTALS COMPOSITE S	Choine Residual Tree	An is	ncomplete chain of processing of			ļ	A COLUMN TO THE PART OF THE PA	Please fill out all applicable
Container Sample Point No./Type	DATE	TIME	Tolling !	Mars	CHINES OF THE		/	ANALYSIS TO BE (PER CON		D			areas completely.
1 FB Sand. 54-1	3/1	1400	& C	50	N		TUPI	metals:	Ar, Ba	, Cd, C	Cr. Pb		-001A-H
2								e, Ag. C.		Zn			
3							TPH D	4 6	gued ;	,	10/3 fem	e	
4 A. TPH, Bromine							8260.	7 7	4	ly col		Section (Section)	
5 B- Withern							Forme	ldehyde	Bro	omine	>		
6 C-8260			·				Total	Rusph	0743			· 图 · 图	
7 D. Alcohol, Formaldery	de						Auruco	nie - DiT	troger	7			
8 E. Glycol							Total	Phonolis	c <u>'</u> ś				
9 F. Phenol													
10 G-T. Sample													
11 H. TCLP Metals									Due	3/15	10		
LAB USE ONLY DELVERED BY				SE				TEMPERATUR	EUPON	RECEIPT	3	℃ ARRIV	AL ON ICE Y)N
RELINQUISHED BY Complete	- 120 miles 2002	T DA	(E. 13)	10	TIME	38	RECEIVED I	BY:		er, t. 1. sector p. 14	The state of the s	DATE:	TIME:
RELINQUISHED BY:		DA	re: / /		TIME:		RECEIVED E	BY:				DATE: / /	TIME:
RELINQUISHED BY:		DAT	TE:	,	TIME:		RECEIVED I	Me poble	mc	Caut	1	DATE: 2/3 /10) TUE: 2 8



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed o each at	r legib ttached	st be fully and acc ly printed in the spa d sheet as Form 26 e date on attached s	ntify	Date Received & General Notes				otes			
Genera	l Refer	ence 287.54									
Date Pr	epared	l/Revised	February 11, 2011								
		1,000 1,000,000 1,000	A. CLIENT (GENE	RATOR	R OF THE WASTE) I	NFO	RMAT	ION			
Compa											
		ergy USA Inc.									
	-	, Name of Parent Co	ompany						Gener	ator ID	#
		ergy Inc. ling Address Line 1		C	ompany Mailing Addre	see li	ne 2	N/A			
50 Peni	•	•		•	ompany maning Addre	.33 LI					
		ress Last Line – Cit	Υ	State	Zip+4		Phone			Ext	
Warren		·		PA	15086		$(724) 8^{-1}$	14-530	00		
Compa	ny Con	tact Last Name	First Name	е	MI			Suffix	(
Brown			Dina						******		
Municip					County						
Warren Contact		e Ext	Contact Email Ad		Allegheny						
(724) 8			dybrown@talism		rom						
			pany Mailing Address					П	Yes	\square	No
			generation and storag			atural	gas com	pletion			
			at 257 Thomas Lane, T								
onsite.											
Municip	ality	Troy	County	Bradfo	ord		Stat	e	PA		
mame.p	<u> </u>	1109			E DESCRIPTION	l		-	- ' ' '		
Resid	ual	Re	sidual Waste	WAU I		•	Unit of		T	Time	
Waste (le Description		Amount		Measure		Frame		
804		Fracing Fluid Was	te (Flow Back Sand)		395		ı yd 📋	gal			
				NEDAL D	ROPERTIES			<u> d</u> ton		One T	ime
a.	pH Rai	nge	7.27 to		(based on analyses or	knowl	edne)				
	_	al State	Liquid Waste			ICI IO VVI	Jugo)				
ν.	. IIyolo	ai Otato	Solid (EPA Me	•	•						
					ture & pressure)						
c.	Physic	al Appearance		h Black		or	Hydroca	arbon			
					Phases of Separation	n _	One				
			Describe each ph	ase of s	eparation. <u>Sand</u>						
m 1-4042-1-10-1-10-1-10-1-10-1-10-1-10-1-1	Mark Control		****			dennio biologic		2000	au chadhaidh an		
			The state of the s		SIS ATTACHMENTS						
		sults of a detailed chations, is attached.	nemical characterization	on of the	waste, as described	ın the		\boxtimes	Yes		No
			ne waste sampling me	thod is a	attached.			\square	Yes		No
C.	The qu	ality assurance/qua	lity control procedure			ies) is	3		Yes		No
	attach		in incate determined -	m !n -44-	ahad			<u> </u>	Voc		No.
			us waste determinatio				1 Vaa		Yes		No N/A
		cable, a detalled exp actual chemical ana	olanation supporting ເ lysis is attached.	use or ge	merator knowledge in	L] Yes 		No 		N/A

		PROCESS DESCRIPTION & SCHE	the part on the formation of the second			
а.	A detailed description of the the waste, as specified in the	manufacturing and/or pollution of instructions, is attached.	control proces	ses producing	⊠ Yes	☐ No
b.	A schematic of the manufact as specified in the instruction	uring and/or pollution control pr ns, is attached.	ocesses produ	icing the waste,	⊠ Yes	☐ No
c.		submitted are confidential, the s scribed in the instructions, is att		for Yes	☐ No	⊠ N/A
	SECTI	ON C. MANAGEMENT O	F RESIDUA	AL WASTE		
		1. Processing or Disposa				4
The ar	ea below (ad.) will accommod	late the identification of two faci	lities. Attach a	additional sheets	if necessary	•
а.	100361	for processing or disposal facil	ity being utiliz	ed.		
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane	,			
	Address Line 1					·
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County	McKean		
c.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931 Ema	I Address	manderfeld@gm	ail.com	
d.	395	processing or disposal facility in cu yd gal lb	⊠ ton	(check one)		
a.	Solid waste permit number(s)	for processing or disposal facil	ity being utiliz	ed.		
b.	Facility Name					
b.	Address Line 1					
b.	Address Line 1 Address Line 1					
b.	Address Line 1 Address Line 1 Address City State ZIP		County			
	Address Line 1 Address Line 1 Address City State ZIP Municipality		County			
b. c.	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name		County			
	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title					
c.	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone		I Address			
	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	Emai processing or disposal facility in cu yd	I Address	year. (check one)		
c.	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	rocessing or disposal facility in	I Address the previous y			
c.	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	processing or disposal facility in cu yd gal b	I Address the previous y		Yes	No
c.	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p Has the waste been approved If "Yes", list the general perm	orocessing or disposal facility in cuyd gal lb 2. BENEFICIAL to for beneficial use? it number or approval number.	I Address the previous y			No
c.	Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	orocessing or disposal facility in cuyd gal lb 2. BENEFICIAL to for beneficial use? it number or approval number.	I Address the previous y		Yes	No

			SECTION D. CERTIFICATION
Report obtaini knowle	and all attached documing the information, I widge. I understand that	ments erify the s	have personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check	the following, if applicab	le:	
	certify the information and has not chang		red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
I	certify the information and has not chang	•	red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	certify the information r		ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name o	of Responsible Official		Title Environmental Specialist
Dina B	rown		
Signatu	ire	5	Msn Date $2/28/11$

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053428

10053428

1 of 5

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. 337 Daniel Zenker Dr ADDRESS:

Horseheads, NY 14845

PAGE:

PO#:

PWS ID#

WO#:

TEST REPORT

PHONE: (607) 731-0145 FAX: (607) 562-4001

FT3H Pad

RECEIVED FOR LAB BY: DLM2 DATE: 05/25/2010 8:54 Page 1 of 5

SAMPLE: Flowback Sand		Lab	D: 10053428-001A	Compo	osite		
SAMPLED BY: SG	Sam	ple Tim	e: 05/24/2010 18:00				
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	643 mg/Kg-dry		EPA 6010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	9.20 mg/kg	N	HACH 8167	0.05	05/26/10 10:26	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Butanone	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter not NELAC certified
- Ammonia sample not distilled υ

MANAGER	Carri M. Davis	DATE: 6/1/2010	
MANAGER	Children W. Deversion	DAIL. 0/1/2010	

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053428

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

156116aus, 141 14643

WO#: 10053428 PAGE: 2 of 5

_ ...

PO#:

PWS ID#

PHONE: FAX: (607) 731-0145 (607) 562-4001

FT3H Pad

RECEIVED FOR LAB BY: DLM2 DATE: 05/25/2010 8:54

Page 2 of 5

ECEIVED FOR LAB BY: DLM2	DATE:	05/2	5/2010 8:54			P	age 2 of 5
Toluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	,	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Acrolein	< 2.09 mg/Kg-dry		EPA 8260B	2.09	05/27/10 19:06	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Acrylonitrile	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
Acetone	< 0.419 mg/Kg-dry		EPA 8260B	0.419	05/27/10 19:06	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Tetrahydrofuran	< 0.209 mg/Kg-dry	N	EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV

REMARKS:

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- N Parameter not NELAC certified
- U Ammonia sample not distilled

		,		
MANAGER	Carri M. Davis	مه	DATE:	6/1/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053428

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley WO#: 10053428

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

PAGE: 3 of 5

PO#:

Horseheads, NY 14845

PHONE: (607) 731-0145 PWS ID#

FAX: (607) 562-4001

ET3H Dad

FT3H Pad							
RECEIVED FOR LAB BY: DLM2	DATE	: (05/25/2010 8:54			1	Page 3 of 5
1,3-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Hexanone	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
Styrene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Cumene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Naphthalene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Chloride	1290 mg/Kg-dry		EPA 300.0	52.4	05/26/10 15:48	05/27/10	HDP-CV
Formaldehyde	< 1.0 mg/Kg-dry	N	NIOSH 3500	1.0	05/27/10 7:30	05/27/10	LTW-CV
Percent Moisture	4.5 %	N	SM2540G		05/25/10 11:35	05/27/10	DMB-CV

SAMPLE: Flowback Sand

Lab ID: 10053428-001B

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 18:00

SLOQ

				<u></u>			
<u>Test</u>	<u>Result</u>		Method		Analysis Start	Analysis End	Analyst *
Ammonia as N	< 10 mg/kg-dry	U	Lachat	10	05/27/10 12:00	05/27/10	JP-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	05/25/10 12:00	05/25/10	IC-SA

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Parameter not NELAC certified
- Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	6/1/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053428

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

WO#: 10053428

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

PAGE: 4 of 5

Horseheads, NY 14845

PO#:

PWS ID#

PHONE: (607) 731-0145 FAX: (607) 562-4001

FT3H Pad						anna a anna a ga
RECEIVED FOR LAB BY: DLM2	DATE: (05/25/2010 8:54			Pa	age 4 of 5
pH	7.27@22.0°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA
SAMPLE: Flowback Sand	La	ab ID: 10053428-001C	Compo	osite		
SAMPLED BY: SG	Sample ⁻	Time: 05/24/2010 18:00	~ ~ ~ ~			
Teşt	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Sample Note: Analysis performed	by Life Science	·				
SAMPLE: Flowback Sand	La	ab ID: 10053428-001D	Compo	osite		
SAMPLED BY: SG	Sample 1	Fime: 05/24/2010 18:00	•			
	·		SLOQ			
Test	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable Sample Note: Analysis performed	< 1.48 mg/Kg DRY by QC Laboratories.	EPA 9065	1.48	05/27/10 8:45	05/27/10	
		h ID: 40050400 0045				
		b ID: 10053428-001E	Compo	SITE		
SAMPLED BY: SG	Sample	Time: 05/24/2010 18:00	SLOQ			
<u>Test</u>	Result	Method	<u>0200</u>	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	575 mg/Kg	EPA 9071		05/26/10 11:00	05/26/10	
Sample Note: Analysis performed	by Microbac- Erie					
SAMPLE: TCLP Leachate of Flowba	ick Sand La	b ID: 10053428-001G	Compo	site		
SAMPLED BY: SG	Sample T	ime: 05/26/2010 7:50				
York	Dogult	Madhad	SLOQ	Amelyaia Ptant	A	A L 4 *
Test Maraya, TCI Playtragted	Result	Method EPA 7470A	A 0000	Analysis Start	Analysis End	
Mercury - TCLP extracted Arsenic - TCLP extracted	< 0.0008 mg/L	EPA 6010B	0.0008	05/26/10 13:30 05/26/10 14:00	05/27/10 05/27/10	JRA-CV
Barium - TCLP extracted	< 0.500 mg/L					GSR-CV
	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00		GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV

REMARKS:

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- N Parameter not NELAC certified
- U Ammonia sample not distilled

	Λ		
MANAGER	Carrie M. Davis	DATE:	6/1/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10053428

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

WO#:

10053428

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

PAGE:

5 of 5

Horseheads, NY 14845

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PWS ID#

PHONE:

FAX:

(607) 731-0145 (607) 562-4001

TEST REPORT

FT3H Pad							
RECEIVED FOR LAB BY: DLM2	DATE: 05/25/2010 8:54			Page 5 of 5			
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV	
Copper - TCLP extracted	0.180 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV	
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV	
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV	
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV	
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV	
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV	

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MANAGER	Carrie M. Davis	DATE:	6/1/2010

CHAIN OF CUSTODY						В	enchm			1OF	1
REPORT TO: Talisman / UEG					25	iss Pa	Ei innsylvar				
geowetlands@aol.com					_`	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Phon Fax: W/O#: 100534	128		CIAL DETECTION	ŀ
twollin@rallysolutions.ca	REF	RIGER	ATE SA	MPLE	S		IKESULTS ARE BEING			LEASE ATTACH	·
	AFTE	R COL	LECT	ION		/DW	DRINKING WATER SL SLUDGE NYDOH NYDE	ic Ado	1	A QC PACKAGE	NECUCO
CONTACT Carro Caidle						/ GW	GROUND WATER SO SOIL			YES N	
Sieve Gridley	1	TRANS TO			/	/ WY	Caibi		- IEVEC D	LEASE ATTACH R	1
PH# 607-731-0145 FAX#	L	ABOR.		•		/ <u>k</u>	/ /H HYDROCHLORIC ACID OH SODIUM HYDROXIDE	<u> </u>	IF TES, P	A /	œduirements
BILL TO: Talisman		IN CO			/ ,	TSO MO	S SULFURIC ACID N NITRIC ACID SO ₃ SODIUM SULFITE NH, AMMONIUM CHLORIDE				•
PO# COMPLETIONS		7	/s	7			Thio SODIUM THIOSULFATE ZN ZINC ACETATE - NONE Hg MERCURIC CHLORIDE			/ Please fli	.:
RIPTION 3 H POOL SAMPLER SIGNATURE / AFFILIATION	/	The Samples	Tomes!	MATRIA .		S. MITA.	An incomplete chain of custody may delay the processing of your sample(s). ANALYSISTO BE PERFORMED (PER CONTAINED)	SITED		applicabl compl	le areas
CONTAINER SAMPLING POINT	1		SAME: OF SAMPLING	SAME.		PRES MITALS COMPOSITE	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITEDON	The Senantic Address of the Control	LAB USE OF	NLY
1 Flowback Sand	BAY	1800	50	C	6	N	TPH, pH, Free Liquids, % Moisture	が発 とより ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・		-00	OME
2							Chlorides, Sodium, Bromine				
3							TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se				罗斯凯
4 A-Na, Cl, Bromine, Alcohol,	PM	teio	18	261	D		Ag, Cu, Zn, Ni				
5 V Formaldehyde							Alcohols, Glycols, Formaldehyde				
6 B. 2H, Free Liquid, Phos. Ni	3						EPA 8260	原語			
7 C Glycol							Total Phosphorus, Total Phenolics				
8 D Phenol							Ammonia - Nitrogen				
9 E TPH							1.06	中海			
10 F. T. Sample							48 HOUR TURNAROUND				
11 G TCLP Metals & Cu. N	172	\uparrow					DAY TURNAROUND		D. G	25071	10
DELIVERED BY				14 (144) 17 (154) 18 (156)	SG		TEMPERATURE UPON RECEIP			-ARRIVAL O	NICE Y/N
RELINOUISHED BY:	<u> </u>		ATE:	251,	0	TIME:	S 4 RECEIVED BY:		DATE:	1 1	TIME:
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RELINQUISHED BY:			DATE: /	!		TIME:	RECEIVED BY: Outbu Mc Cas	Ly	DATE:	125 10 Adding	TIME: <u>\$54</u> phics Printing 570-888-0686



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

typed or le each attac	gibly printed in hed sheet as	the spaces pr Form 26R, ref	y completed. All requi ovided. If additional sp erence the item numb needs to match the date	ace is necessary, ider er and identify the o	ntify Da	DEP U te Receive		eneral Notes
General Re	ference 287.54							
Date Prepa	red/Revised	Februa	ary 11, 2011					
	SEC	TION A. C	LIENT (GENERATOR	ROF THE WASTE)	NFORMA	TION		
Company N								
	nergy USA Inc			****		ED 4 (
	ary, Name of Pa	arent Compan	у			N/A	ener	ator ID#
Talisman E	lailing Address	Line 1	C	ompany Mailing Addre	ass line 2	IN/A		
50 Pennwo	•	Line	0.	ompany maning Addit	cos Line 2			
	ddress Last Lir	ne – City	State	Zip+4	Phone	 }		Ext
Warrendal		•	PA	15086	(724)	814-530	0	
Company C	ontact Last Na	me	First Name	MI		Suffix		
Brown			Dina					
Municipalit	•			County				
Warrendale Contact Ph		Ext C	ontact Email Address	Allegheny				
(724) 814-			ybrown@talismanusa.c	rom				
			Mailing Address (noted a				Yes	⊠ No
			ation and storage. Wast		atural gas co			
			ed at 1242 Swamp Road,					
temporarily	stored onsite.							
Municipalit	y Arme	nio	County Bradfo	ard	St	ate	PA	
mamorpant	AIIIIG	illa	Diaulty Diault	лu		acc	F A	
		Ĉ	ECTION B WAST	E DESCRIPTION	I			
Pasidual				E DESCRIPTION		of		Time
Residual Waste Cod	a	Residual	Waste		Unit			Time Frame
Waste Cod		Residual Code Des	Waste cription	Amount				Time Frame
		Residual Code Des	Waste cription w Back Sand)	Amount 638	Unit Measu	ure		
Waste Cod 804	Fracing Flu	Residual Code Desc id Waste (Flo	Waste cription w Back Sand) 1. GENERAL P	Amount 638 ROPERTIES	Unit Measu cu yd	u re □ gal		Frame
804 a. pH	Fracing Flu	Residual Code Des	Waste cription w Back Sand) 1. GENERAL P to	Amount 638 ROPERTIES (based on analyses or	Unit Measu cu yd	u re □ gal		Frame
804 a. pH	Fracing Flu	Residual Code Des id Waste (Flo 7.60	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me	Amount 638 ROPERTIES (based on analyses or thod 9095)	Unit Measu cu yd	u re □ gal		Frame
Waste Cod 804 a. pH	Fracing Flu	Residual Code Desc id Waste (Flo	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909	Amount 638 ROPERTIES (based on analyses or thod 9095) 95)	Unit Measu cu yd	u re □ gal		Frame
804 a. pH lb. Phy	Fracing Flu Range sical State	Residual Code Desc id Waste (Flo 7.60	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient tempera	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure)	Unit Measu Cu yd Ib	ure ☐ gal ☑ ton		Frame
804 a. pH lb. Phy	Fracing Flu	Residual Code Descid Waste (Flo	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperatolor Greyish Black	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Od	Unit Measu cu yd lb lb lb lb loor Hydro	u re □ gal		Frame
804 a. pH lb. Phy	Fracing Flu Range sical State	Residual Code Described Waste (Flo	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperatolor Greyish Black	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation	Unit Measu cu yd lb lb lb lb lb loor lb loor Hydro	ure ☐ gal ☑ ton		Frame
804 a. pH lb. Phy	Fracing Flu Range sical State	Residual Code Described Waste (Flo	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperatolor Greyish Black	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation	Unit Measu cu yd lb lb lb lb loor Hydro	ure ☐ gal ☑ ton		Frame
a. pH b. Phy	Fracing Flu Range sical State sical Appearance	Residual Code Des	Waste cription W Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperatolor Greyish Black umber of Solid or Liquid escribe each phase of s	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand	Unit Measu cu yd □ cu yd □ lb knowledge) or Hydro n One	ure ☐ gal ☑ ton		Frame
a. phy a. The inst	Fracing Flu Range sical State sical Appearance results of a det	Residual Code Desi id Waste (Flo 7.60 ce Co Ni cailed chemical	Waste cription W Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperatolor Greyish Black umber of Solid or Liquid escribe each phase of solid characterization of the	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described	Unit Measu cu yd □ cu yd □ lb knowledge) or Hydro n One	gal	Yes	Frame
a. phy a. The inst b. A de	Fracing Flu Range sical State sical Appearance results of a det ructions, is atta	Residual Code Description 7.60 7.60 Ce Control Cailed chemical Iched. Ic	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 900) Gas (ambient temperate) Color Greyish Black umber of Solid or Liquid escribe each phase of solid characterization of the	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	Unit Measu Cu yd Ch yd Cu yd Ch yd Ch yd Ch yd Cu yd Ch yd C	gal gal carbon	Yes	One Time
a. phy a. phy c. Phy a. The inst b. A de c. The	Fracing Flu Range sical State sical Appearance results of a det ructions, is atta	Residual Code Description 7.60 7.60 Ce Control Cailed chemical Iched. Ic	Waste cription W Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperatolor Greyish Black umber of Solid or Liquid escribe each phase of solid characterization of the	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	Unit Measu Cu yd Ch yd Cu yd Ch yd Ch yd Ch yd Cu yd Ch yd C	gal gal carbon		One Time One No
a. Phy a. The inst b. A de c. The atta	Fracing Flu Range sical State sical Appearance results of a det ructions, is atta etailed descripti quality assurar ched.	Residual Code Descrite Vaste (Floration of the was nee/quality control of the code of the control of the control of the code o	Waste cription w Back Sand) 1. GENERAL P to Liquid Waste (EPA Me Solid (EPA Method 900) Gas (ambient temperate) Color Greyish Black umber of Solid or Liquid escribe each phase of solid characterization of the	Amount 638 ROPERTIES (based on analyses or thod 9095) 95) ture & pressure) Odd Phases of Separation eparation. Sand BIS ATTACHMENTS waste, as described attached. yed by the laboratory(Unit Measu Cu yd Ch yd Cu yd Ch yd Ch yd Ch yd Cu yd Ch yd C	gal Ston	Yes	One Time No No

Section 1	3.	PROCESS DESCRIPTION & S	SCHEMATIC ATTAC	HMENTS	A Profession of the	945000000000000000000000000000000000000
a.	A detailed description of the the waste, as specified in the		ion control proce	sses producing	⊠ Yes	☐ No
b.	A schematic of the manufacture as specified in the instruction		ol processes prod	lucing the waste,	⊠ Yes	☐ No
C.	If portions of the information a confidentiality claim, as des			n for Yes	☐ No	⊠ N/A
	SECTION	ON C. MANAGEMEN	T OF RESIDU	AL WASTE		
		1. Processing or Disp	the state of the s	and the second section of the section of		
The ar	rea below (ad.) will accommod				f necessary	•
а.	Solid waste permit number(s) 100361	for processing or disposal	facility being utili	zed.		
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane				
	Address Line 1					
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County	McKean		
c.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931	Email Address	manderfeld@gm	ail.com	
d.	Volume of waste shipped to p	cu yd 🔲 gal 🔲	lb 🔀 ton	(check one)		
a.	Solid waste permit number(s)	for processing or disposal	facility being utili	zed.		
b.	Facility Name					
	Address Line 1					
	Address Line 1					
	Address City State ZIP		0			
	Municipality		County			
C.	Facility Contact Name					
	Title		F			
	Phone		Email Address			
d.	Volume of waste shipped to p	rocessing or disposal facili cu yd gal	ty in the previous	•		
	. The state of th	2. Benefici	AL USE			
a.	Has the waste been approved			200 - Anna Carlos Carlos (1990 - 1990	Yes	⊠ No
	If "Yes", list the general perm	it number or approval numb	oer.			
b.	If "Yes", list the general perm Volume of waste beneficially		oer.			

			SECTION D. CERTIFICATION
Report obtain knowle	t and all attached docu ling the information, I veloge. I understand that	ments erify the s	ave personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check	the following, if applicab	le:	
	I certify the information and has not chan	-	red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not change		red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information r		ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina I	Brown		
Signa	ture	_5	Date $\frac{2/25}{2}$

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

(607) 562-4000

(607) 562-4001

Horseheads, NY 14845

TEST REPORT

WO#: 10090957

PAGE: 1 of 4

Work Order: 10090957

PO#:

PWS ID#

TWL Assoc.

PHONE:

FAX:

RECEIVED FOR LAB BY: DLM2 DATE: 09/07/2010 16:25 Page 1 of 4

	Lab II	D: 10090957-001A	Compo	site		
San	nple Time	e: 08/30/2010 13:30	01.00			
Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
1810 mg/Kg-dry		EPA 6010B	126	09/09/10 7:20	09/09/10	RMD-CV
18.4 mg/kg	ΚN	HACH 8167	0.05	09/08/10 15:20	09/08/10	SMH-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.213 mg/Kg-dry		EPA 8260B	0.213	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
	Result	Result < 4 mg/Kg < 1810 mg/Kg-dry 18.4 mg/kg < 0.043 mg/Kg-dry < 0.043 mg/Kg-dry	< 4 mg/Kg	Sample Time: 08/30/2010 13:30 Result Method < 4 mg/Kg	Result Method Analysis Start < 4 mg/Kg	Result Method Analysis Start Analysis End < 4 mg/Kg

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time. Κ
- Parameter is not NELAC certified Ν
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- Ammonia sample not distilled U
- Due to matrix bias, spike recovery was outside acceptance limits Z

	/ /	. 7		0/10/10/10
MANAGER	ani	M. Oavis	DATE:	9/13/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

TWL Assoc.

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS:

337 Daniel Zenker Dr Horseheads, NY 14845 WO#:

10090957

Work Order: 10090957

PAGE: 2 of 4

PO#:

PWS ID#

TEST REPORT

PHONE: (607) 562-4000

FAX: (607) 562-4001

CEIVED FOR LAB BY: DLM2	DATI	Ξ: 09/0	07/2010 16:25			F	age 2 of 4
Dibromomethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromodichloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
cis-1,3-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Toluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
4-Methyl-2-pentanone (MIBK)	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
trans-1,3-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,2-Trichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Tetrachloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Dibromochloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dibromoethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,1,2-Tetrachloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Ethylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
m,p-Xylene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
o-Xylene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Xylenes, Total	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromoform	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/10/10 13:26	09/10/10	MTB-CV
1,1,2,2-Tetrachloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2,3-Trichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,3-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,4-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chloride	3150 mg/Kg-dry		EPA 300.0	53.4	09/08/10 15:54	09/09/10	HDP-CV
Formaldehyde	< 1.1 mg/Kg-dry	ΝZ	NIOSH 3500	1.1	09/10/10 8:10	09/10/10	LTW-CV
Percent Moisture	6.3 %	K	SM2540G		09/09/10 12:30	09/10/10	SG-SA

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time. Κ
- Ν Parameter is not NELAC certified
- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- U Ammonia sample not distilled
- Due to matrix bias, spike recovery was outside acceptance limits Ζ

MANAGER	Carrie M. Davis	DATE:	9/13/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090957

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10090957

PAGE:

3 of 4

PO#:

PWS ID#

PHONE: (607) 562-4000

FAX: (607) 562-4001

TWL Assoc.

TEST REPORT

Page 3 of 4

RECEIVED FOR LAB BY: DLM2	DATI	Ξ: 09/0	7/2010 16:25			Pa	ige 3 of 4
SAMPLE: Flowback Sand SAMPLED BY: LS	San		D: 10090957-001B e: 08/30/2010 13:30	Compo	site		
<u>Test</u> Moisture Ammonia as N Free Liquid pH	Result 6.30 % 33.7 mg/kg-dry < 0.1 % 7.60@19.5°C	K U	Method Moisture Calc. Lachat EPA 9095A EPA 9045C	0.01 10.7 0.1	Analysis Start 09/09/10 12:30 09/09/10 11:31 09/07/10 17:05 09/10/10 10:00	Analysis End 09/10/10 09/09/10 09/07/10 09/10/10	Analyst * SG-SA KAL-SA IC-SA SG-SA
Phosphorus SAMPLE: Flowback Sand SAMPLED BY: LS	34 mg/kg-dry		EPA 365.3 D: 10090957-001C D: 08/30/2010 13:30	5 Compo	09/09/10 10:30 site	09/10/10	MED-SA
Test Ethylene glycol Propylene glycol Sample Note: Analysis performed b	Result < 10.00 mg/Kg < 10.00 mg/Kg		Method Glycols by 8015 Glycols by 8015	10.00 10.00	Analysis Start 09/10/10 0:00 09/10/10 0:00	Analysis End 09/10/10 09/10/10	Analyst *
SAMPLE: Flowback Sand SAMPLED BY: LS Test Phenolics, Total Recoverable Sample Note: Analysis performed by	San <u>Result</u> 8.59 mg/Kg DRY	Lab I	D: 10090957-001D D: 08/30/2010 13:30 Method EPA 9065	Compo SLOQ 1.33	site <u>Analysis Start</u> 09/09/10 7:15	<u>Analysis End</u> 09/09/10	Analyst *
SAMPLE: Flowback Sand SAMPLED BY: LS <u>Test</u> Total Petroleum Hydrocarbons	San <u>Result</u> 370 mg/Kg		0: 10090957-001E 0: 08/30/2010 13:30 Method EPA 9071	Compo SLOQ	Analysis Start 09/08/10 14:30	<u>Analysis End</u> 09/08/10	Analyst *

REMARKS:

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- Due to matrix effects, not all quality control parameters met acceptance criteria Q
- U Ammonia sample not distilled
- Due to matrix bias, spike recovery was outside acceptance limits

	\(\frac{1}{2}\)		
MANAGER	Churi M. Navis	DATE:	9/13/2010
	9000		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090957

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10090957

PAGE:

4 of 4

PO#:

TEST REPORT

PWS ID#

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(607) 562-4000

(607) 562-4001

TWL Assoc.

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 4 of 4

Sample Note: Analysis performed by Microbac Laboratories, Inc.-Erie Division Lab ID: 10090957-001G SAMPLE: TCLP Leachate of Flowback Sand Composite SAMPLED BY: LS Sample Time: 09/08/2010 10:00 SLOQ Result Method **Analysis Start** Analysis End Analyst * <u>Test</u> < 0.0008 mg/L EPA 7470A 0.0008 09/09/10 Mercury - TCLP extracted 09/09/10 10:00 KW-CV 09/09/10 12:45 < 0.500 mg/L Arsenic - TCLP extracted **EPA 6010B** 0.500 09/09/10 RMD-CV < 10.00 mg/L09/09/10 12:45 Barium - TCLP extracted **EPA 6010B** 10.00 09/09/10 RMD-CV Cadmium - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV Chromium - TCLP extracted < 0.500 mg/L 0.500 09/09/10 12:45 09/09/10 EPA 6010B RMD-CV 09/09/10 12:45 Copper - TCLP extracted 0.733 mg/L **EPA 6010B** 0.100 09/09/10 RMD-CV Lead - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 12:45 09/09/10 RMD-CV Nickel - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 12:45 09/09/10 Selenium - TCLP extracted RMD-CV Silver - TCLP extracted 09/09/10 **EPA 6010B** 0.100 09/09/10 12:45 < 0.100 mg/L RMD-CV < 0.200 mg/L 09/09/10 12:45 Zinc - TCLP extracted **EPA 6010B** 0.200 09/09/10 RMD-CV

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- U Ammonia sample not distilled
- Z Due to matrix bias, spike recovery was outside acceptance limits

	//		
MANAGER	Carri M. Davis	DATE:	9/13/2010



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

FORM 26R CHEMICAL ANALYSIS OF RESIDUAL WASTE ANNUAL REPORT BY THE GENERATOR

This form must be fully and accur typed or legibly printed in the space each attached sheet as Form 26R prepared. The date on attached she	s provided. If additional sp , reference the item numb	ace is necessary, idener er and identify the c	tify Date Receive	USE ONLY ed & General Notes
General Reference 287.54				
Date Prepared/Revised Fe	ebruary 11, 2011			
SECTION A	CLIENT (GENERATOR	R OF THE WASTE) I	NEORMATION	
Company Name		Notes of the state	Control of the second s	
Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Com	pany			Generator ID#
Talisman Energy Inc.			N/A	
Company Mailing Address Line 1	C	ompany Mailing Addre	ess Line 2	
50 Pennwood Place	C4-4-	7: , 4	DI	F4
Company Address Last Line – City Warrendale	State PA	Zip+4 15086	Phone (724) 814-530	Ext
Company Contact Last Name	First Name	13086 MI	(724) 614-330 Suffix	
Brown	Dina	1411	Gamz	•
Municipality		County		
Warrendale		Allegheny		
Contact Phone Ext	Contact Email Address			
(724) 814-5321	dybrown@talismanusa.c			
Is the waste generated at the Compa				Yes 🛛 No
If 'No', describe location of waste ge				
	cated at 1226 Besley Road, C	Columbia Township, Bra	dford County, PA. Th	ie waste is
temporarily stored onsite.				
Municipality Columbia	County Bradfo	ord	State	PA
	SECTION B. WAST			
Residual Resid	dual Waste		Unit of	Time
Waste Code Code	Description	Amount	Measure	Frame
804 Fracing Fluid Waste	(Flow Back Sand)	546	☐ cu yd ☐ gal	
	1. GENERAL P	PODEDTIES	☐ lb	One Time
a. pH Range 7	AND THE REPORT OF THE PROPERTY	(based on analyses or I	(nowledge)	
b. Physical State	Liquid Waste (EPA Me			
,	Solid (EPA Method 909	•		
	Gas (ambient tempera	•		
c. Physical Appearance	Color Greyish Black	 	or Hydrocarbon	
	Number of Solid or Liquid	- · · · · · · · · · · · · · · · · · · ·		
	Describe each phase of s	•		
	2 CHEMICAL ANALYS	SIS ATTACHMENTS		
a. The results of a detailed che				
instructions, is attached.	nical characterization of the		n the	Yes No
instructions, is attached.b. A detailed description of the	nical characterization of the	waste, as described i	-	Yes No
b. A detailed description of thec. The quality assurance/quality	nical characterization of the waste sampling method is a	waste, as described i		
b. A detailed description of the	nical characterization of the waste sampling method is a control procedures employ	waste, as described intached. yed by the laboratory(ies) is	Yes No

2540-PM-BWM0347 Rev. 1/2011

		PROCESS DESCRIPTION & S				
а.	A detailed description of the the waste, as specified in the		tion control proce	esses producing	⊠ Yes	☐ No
b.	A schematic of the manufactor as specified in the instruction		ol processes prod	ducing the waste,	⊠ Yes	☐ No
C.	If portions of the information a confidentiality claim, as de			n for	☐ No	⊠ N/A
	SECTION	ON C. MANAGEMEN	T OF RESIDU	JAL WASTE		
		1. PROCESSING OR DISI	POSAL FACILITY(IE	ES)		
The ar	ea below (ad.) will accommod	late the identification of two	facilities. Attach	n additional sheets	if necessary.	•
a.	Solid waste permit number(s 100361	for processing or disposal	facility being util	ized.		
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane				
	Address Line 1					
	Address City State ZIP	Kane	PA	16735		
	Municipality	Kane	County	McKean		
c.	Facility Contact Name	Mike Manderfeld				
	Title	General Manager				
	Phone	814-778-9931	Email Address	manderfeld@gm	iail.com	
d. Volume of waste shipped to processing or disposal facility in the previous year. 546 □ cu yd □ gal □ lb ☑ ton (check one)						
	546	cu yd 🔲 gal 📗] lb 🛚 🖾 tor	(check one))	
a.	Solid waste permit number(s)	cu yd 🔲 gal 📗] lb 🛚 🖾 tor	(check one))	
a. b.	546 Solid waste permit number(s) Facility Name	cu yd 🔲 gal 📗] lb 🛚 🖾 tor	(check one))	
	546 Solid waste permit number(s) Facility Name Address Line 1	cu yd 🔲 gal 📗] lb 🛚 🖾 tor	(check one))	
	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1	cu yd 🔲 gal 📗] lb 🛚 🖾 tor	(check one))	
	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP	cu yd gal	∫ lb ⊠ tor facility being util	(check one))	
	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	cu yd gal] lb 🛚 🖾 tor	(check one)		
	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	cu yd gal	∫ lb ⊠ tor facility being util	(check one)		
b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd gal gal for processing or disposal	facility being util	(check one)		
b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal gal for processing or disposal	facility being util County Email Address	ized.		
b.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd gal gal for processing or disposal	facility being util County Email Address	ized.		
b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd gal cou yd gal c	County Email Address ity in the previous	ized.		
b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal cou yd gal c	County Email Address ity in the previous	ized.		No
b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to pure the state of the state	rocessing or disposal facilicu yd gal 2. BENEFIC for beneficial use?	County Email Address ity in the previous Ib	ized.		No No
b. c.	Solid waste permit number(s) Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	rocessing or disposal facilicu yd gal 2. BENEFIC for beneficial use?	County Email Address ity in the previous Ib	ized.) Yes	No

	relation than the		SECTION D. CERTIFICATION
Repor obtain knowl	t and all attached docu ning the information, I veloge. I understand that	ments erify the s	have personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check	the following, if applicat	le:	
	I certify the information and has not chan	•	red in Section B-1, General Properties was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information and has not chan	-	red in Section B-2, Chemical Analysis was supplied to the Department for the year
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
	I certify the information if for the year and h		ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.
	Form Submitted:		Form 26R
			Other (specify)
	Date Submitted:		
Name	of Responsible Official		Title Environmental Specialist
Dina I	Brown		
Signa	ture 12	ć	$\int l s n = \frac{2}{2} s / c l$

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10083673

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PAGE: 1 of 3

10083673

PO#:

WO#:

PWS ID#

PHONE: FAX:

(607) 562-4000

(607) 562-4001

1 Pad

RECEIVED FOR LAB BY: DLM2 DATE: 08/20/2010 11:51 Page 1 of 3

AMPLE: Flowback Sand			D: 10083673-001A	Compo	osite		
SAMPLED BY: SG	San	ple Tim	e: 08/15/2010 13:30	SLOQ			
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	Ν	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Sodium	740 mg/Kg-dry		EPA 6010B	137	08/24/10 15:00	08/24/10	RMD-C\
Bromine	<0.46 mg/Kg	ΚN	HACH 8167	0.05	08/23/10 17:32	08/23/10	TLB-CV
Styrene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/24/10 8:50	08/24/10	DN-CV
Chloride	1130 mg/Kg-dry		EPA 300.0	51.5	08/23/10 14:05	08/23/10	HDP-CV
Formaldehyde	< 1.0 mg/Kg-dry	ΝZ	NIOSH 3500	1.0	08/25/10 8:10	08/25/10	LTW-CV
Percent Moisture	3.0 %		SM2540G		08/23/10 13:30	08/24/10	MED-SA
AMPLE: Flowback Sand	· · · · · · · · · · · · · · · · · · ·	Lab II	D: 10083673-001B	Compo	site		
SAMPLED BY: SG	Sam	ple Tim	e: 08/15/2010 13:30				
				SLOQ			
<u>Test</u>	Result		Method		Analysis Start	Analysis End	Analyst *
Moisture	3.00 %		Moisture Calc.	0.01	08/23/10 13:30	08/24/10	MED-SA
Ammonia as N	10.5 mg/kg-dry	UB	Lachat	1.0	08/23/10 14:46	08/23/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	08/23/10 15:35	08/23/10	IC-SA
рН	8.04@21.1°C		EPA 9045C		08/23/10 16:12	08/23/10	MED-SA
Phosphorus	28 mg/kg-dry		EPA 365.3	5	08/23/10 15:30	08/24/10	JP-SA

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Analyte detected in the associated Method Blank
- Sample was received past holding time. Κ
- Parameter is not NELAC certified
- Ammonia sample not distilled
- Z Due to matrix bias, spike recovery was outside acceptance limits

		D. 4 777	0/26/2010
MANAGER	Carrie M. Oaks	DATE:	8/26/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10083673

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

Steve Gridley NAME:

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

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PAGE: 2 of 3

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1 Pad

RECEIVED FOR LAR BY: DLM2 DATE: 08/20/2010 11:51 Dago 2 of 2

RECEIVED FOR LAB BY: DLM2	DATE	: 08/20/2010 11:51			Pa	ige 2 of 3
SAMPLE: Flowback Sand		Lab ID: 10083673-001C				
SAMPLED BY: SG	Sam	ple Time: 08/15/2010 13:30	01.00			
Test	Result	<u>Method</u>	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	08/25/10 0:00	08/25/10	
Sample Note: Analysis performed	d by Summit Environmenta	l Technologies, Inc.				
SAMPLE: Flowback Sand		Lab ID: 10083673-001D	Compo	site		
SAMPLED BY: SG	Sam	ple Time: 08/15/2010 13:30	SLOQ			
<u>Test</u>	Result	<u>Method</u>		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	6.22 mg/Kg DRY	EPA 9065	1.31	08/25/10 7:15	08/25/10	
Sample Note: Analysis performed	d by QC Laboratories.					
SAMPLE: Flowback Sand		Lab ID: 10083673-001E	Compo	site		
SAMPLED BY: SG	Sam	ple Time: 08/15/2010 13:30	SLOQ			
<u>Test</u>	Result	Method	<u> </u>	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	1420 mg/Kg	EPA 9071		08/23/10 11:15	08/23/10	
Sample Note: Analysis performed	d by Microbac-Erie					
SAMPLE: TCLP Leachate of Flowb	ack Sand	Lab ID: 10083673-001G	Compo	site		
SAMPLED BY: SG	Sam	ple Time: 08/21/2010 9:00				
Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	08/24/10 8:45	08/24/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/24/10 10:50	08/24/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	08/24/10 10:50	08/24/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/24/10 10:50	08/24/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/24/10 10:50	08/24/10	RMD-CV
	•					

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- В Analyte detected in the associated Method Blank
- Sample was received past holding time. Κ
- Ν Parameter is not NELAC certified
- U Ammonia sample not distilled
- Due to matrix bias, spike recovery was outside acceptance limits

Carrie M. Davis DATE: 8/26/2010 **MANAGER**

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Work Order: 10083673

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS:

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10083673

PAGE:

3 of 3

PO#:

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

TEST REPORT

PWS ID#

1 Pad

DATE: 08/20/2010 11:51 RECEIVED FOR LAB BY: DLM2 Page 3 of 3 Copper - TCLP extracted 0.707 mg/L EPA 6010B 08/24/10 10:50 08/24/10 RMD-CV 0.100 Lead - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 08/24/10 10:50 08/24/10 RMD-CV Nickel - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 08/24/10 10:50 08/24/10 RMD-CV Selenium - TCLP extracted < 0.500 mg/L EPA 6010B 0.500 08/24/10 10:50 08/24/10 RMD-CV Silver - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 08/24/10 10:50 08/24/10 RMD-CV Zinc - TCLP extracted 0.666 mg/L **EPA 6010B** 0.200 08/24/10 10:50 08/24/10 RMD-CV

REMARKS:

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- В Analyte detected in the associated Method Blank
- Sample was received past holding time. Κ
- Ν Parameter is not NELAC certified
- U Ammonia sample not distilled
- Ζ Due to matrix bias, spike recovery was outside acceptance limits

	//		
MANAGER		DATE:	8/26/2010
	9000 111. O- 1	_,	

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169 Fax: (570) 888-0717

TEST REPORT

SEND DATA TO:

NAME: Steve Gridley

WO#: 10090959

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

PAGE: 1 of 4

Horseheads, NY 14845

PO#:

leaus, NT 14045

PWS ID#

PHONE:

FAX:

(607) 562-4000

(607) 562-4000

RECEIVED FOR LAB BY: DLM2 DATE: 09/07/2010 16:25

Page 1 of 4

SAMPLE: Flowback Sand		Lab II	D: 10090959-001A	Compo	site		
SAMPLED BY: LS	Sar	nple Tim	e: 08/30/2010 12:19				
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Ethanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	
			•				JJ6-CV
Isopropanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
t-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Propanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isobutanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Sodium	2870 mg/Kg-dry		EPA 6010B	130	09/09/10 7:20	09/09/10	RMD-CV
Bromine	6.90 mg/kg	ΚN	HACH 8167	0.05	09/08/10 15:26	09/08/10	SMH-CV
1,1-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Methylene chloride	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
2-Butanone	< 0.213 mg/Kg-dry		EPA 8260B	0.213	09/08/10 9:50	09/08/10	MTB-CV
trans-1,2-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1-Dichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
cis-1,2-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chloroform	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,1-Trichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Carbon tetrachloride	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Benzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Trichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; ŠA = Benchmark Analytics, Inc. Sayre, PA
- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER	Carrie M. Davis	DATE:	9/13/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

PHONE:

FAX:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS:

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10090959

PAGE:

2 of 4

PO#:

(607) 562-4000 (607) 562-4001 **TEST REPORT**

PWS ID#

RE

ECEIVED FOR LAB BY: DLM2	DATE	: 0	9/07/2010 16:25			Р	age 2 of 4
Dibromomethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromodichloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
cis-1,3-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Toluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
4-Methyl-2-pentanone (MIBK)	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
trans-1,3-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,2-Trichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Tetrachloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Dibromochloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dibromoethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,1,2-Tetrachloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Ethylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
m,p-Xylene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
o-Xylene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Xylenes, Total	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromoform	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/10/10 13:26	09/10/10	MTB-CV
1,1,2,2-Tetrachloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2,3-Trichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,3-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,4-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chloride	5890 mg/Kg-dry		EPA 300.0	53.4	09/08/10 15:54	09/09/10	HDP-CV
Formaldehyde	1.5 mg/Kg-dry	N	NIOSH 3500	1.1	09/10/10 8:10	09/10/10	LTW-CV
Percent Moisture	6.3 %	K	SM2540G		09/09/10 12:30	09/10/10	SG-SA

REMARKS:

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- Sample was received past holding time.
- Value above calibration range but within annually verified linear range
- Ν Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- Ammonia sample not distilled U

MANAGED $/a$: ba $/a$		//	
WANAGEN and M. Ca	MANAGER	Carrie M. C	ave.

DATE:

9/13/2010

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc. ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10090959

PAGE:

3 of 4

PO#:

TEST REPORT

PWS ID#

PHONE: (607) 562-4000 FAX: (607) 562-4001

DECEIVED EOD I VD DV: DI MO

RECEIVED FOR LAB BY: DLM2	DATE	E: 09/0	07/2010 16:25			Pa	ige 3 of 4
SAMPLE: Flowback Sand		Lab II	D: 10090959-001B	Compo	osite		
SAMPLED BY: LS	Sam	ple Tim	e: 08/30/2010 12:19	01.00			
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	6.30 %	K	Moisture Calc.	0.01	09/09/10 12:30	09/10/10	SG-SA
Ammonia as N	54.7 mg/kg-dry	U	Lachat	10.7	09/09/10 11:31	09/09/10	KAL-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	09/07/10 17:15	09/07/10	IC-SA
рH	7.54@19.8°C		EPA 9045C		09/10/10 10:00	09/10/10	SG-SA
Phosphorus	27 mg/kg-dry		EPA 365.3	5	09/09/10 10:30	09/10/10	MED-SA
SAMPLE: Flowback Sand		Lab II	D: 10090959-001C	Compo	site		
SAMPLED BY: LS	Sam	ple Tim	e: 08/30/2010 12:19	SLOQ			
<u>Test</u>	<u>Result</u>		<u>Method</u>		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg		Glycols by 8015	10.00	09/10/10 0:00	09/10/10	
Propylene glycol	< 10.00 mg/Kg		Glycols by 8015	10.00	09/10/10 0:00	09/10/10	
Sample Note: Analysis performed	d by Summit Environmenta	al Techn	ologies, Inc.				
SAMPLE: Flowback Sand		Lab I	D: 10090959-001D	Compo	site		
SAMPLED BY: LS	Sam	ple Time	e: 08/30/2010 12:19	SLOQ			
<u>Test</u>	Result		<u>Method</u>		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	8.80 mg/Kg DRY	K	EPA 9065	1.33	09/09/10 7:15	09/09/10	
Sample Note: Analysis performed	d by QC Laboratories.						
SAMPLE: Flowback Sand		Lab I	D: 10090959-001E	Compo	site		
SAMPLED BY: LS	Sam	ple Time	e: 08/30/2010 12:19	SLOQ			
<u>Test</u>	Result		Method	SLUU	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	230 mg/Kg		EPA 9071		09/08/10 14:30	09/08/10	

REMARKS:

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- Sample was received past holding time.
- Value above calibration range but within annually verified linear range L
- Ν Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- Ammonia sample not distilled

MANAGER (ani M. Davis	DATE:	9/13/2010
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	www.reliable		

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

Talisman Energy USA, Inc. COMPANY:

337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10090959

PAGE:

4 of 4

PO#:

PHONE:

FAX:

ADDRESS:

(607) 562-4000

(607) 562-4001

TEST REPORT

PWS ID#

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 4 of 4

Sample Note: Analysis performed by Microbac Laboratories, Inc.-Erie Division Lab ID: 10090959-001G SAMPLE: TCLP Leachate of Flowback Sand Composite SAMPLED BY: LS Sample Time: 09/08/2010 10:00 SLOQ Test Result Method Analysis Start Analysis End Analyst * < 0.0008 mg/L Mercury - TCLP extracted **EPA 7470A** 8000.0 09/09/10 10:00 09/09/10 KW-CV Arsenic - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 12:45 09/09/10 RMD-CV Barium - TCLP extracted **EPA 6010B** 38.5 mg/L 10.00 09/09/10 12:45 09/09/10 RMD-CV Cadmium - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV < 0.500 mg/L 0.500 09/09/10 12:45 Chromium - TCLP extracted **EPA 6010B** 09/09/10 RMD-CV Copper - TCLP extracted 0.351 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV Lead - TCLP extracted 09/09/10 12:45 < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 RMD-CV Nickel - TCLP extracted < 0.100 mg/L 09/09/10 12:45 **EPA 6010B** 0.100 09/09/10 RMD-CV Selenium - TCLP extracted < 0.500 mg/L **EPA 6010B** 0.500 09/09/10 12:45 09/09/10 RMD-CV Silver - TCLP extracted < 0.100 mg/L **EPA 6010B** 0.100 09/09/10 12:45 09/09/10 RMD-CV Zinc - TCLP extracted < 0.200 mg/L **EPA 6010B** 0.200 09/09/10 12:45 09/09/10 RMD-CV

REMARKS:

- CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Sample was received past holding time.
- Value above calibration range but within annually verified linear range 1
- Ν Parameter is not NELAC certified
- Due to matrix effects, not all quality control parameters met acceptance criteria Ω
- U Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	9/13/2010
		1,000 11 10	



This form must be fully and accura typed or legibly printed in the spaces each attached sheet as Form 26R, prepared. The date on attached shee	provided. If additional sp reference the item numb	ace is necessary, iden er and identify the o	ntify Date Rece	PUSE ONLY sived & General Notes
General Reference 287.54				
Date Prepared/Revised Feb	oruary 11, 2011			
SECTION A.	CLIENT (GENERATOR	R OF THE WASTE)	NFORMATION	1
Company Name	· · · · · · · · · · · · · · · · · · ·	<i></i>	1. I	
Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Comp	any			A Generator ID#
Talisman Energy Inc.			N/.	Α
Company Mailing Address Line 1	C	ompany Mailing Addre	ess Line 2	
50 Pennwood Place	C4-4-	7:4	Dis	F4
Company Address Last Line – City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5	Ext
Company Contact Last Name	First Name	13000 MI		ffix
Brown	Dina	1411	Ou.	1112
Municipality		County		
Warrendale		Allegheny		
Contact Phone Ext	Contact Email Address			
(724) 814-5321	dybrown@talismanusa.c			
Is the waste generated at the Compan] Yes 🔲 No
If 'No', describe location of waste gen	eration and storage. <u>Wast</u>	e is generated during n	atural gas completi	on operations at the
(01-041/042) R well pad site loo stored onsite.	cated at 778 Cease Drive, Tr	oy Township, Bradford	County, PA. The w	vaste is temporarily
stored onsite.				
Municipality Troy	County Bradfo	ord	State	PA
	SECTION B. WAST			
Residual Residu	ıal Waste		Unit of	Time
	escription	Amount	Measure	Frame
804 Fracing Fluid Waste (Flow Back Sand)	645	☐ cu yd ☐ ga	
	1. GENERAL P.		☐ lb toı	n
a. pH Range 7.2	The state of the s	(based on analyses or	knowlodgo)	
b. Physical State	Liquid Waste (EPA Me	 	Kilowiedge)	
b. Thysical State	Solid (EPA Method 909	•		
	Gas (ambient tempera	•		
c. Physical Appearance			or Hydrocarbo	n
	Color Grevish Black			
	Color Greyish Black Number of Solid or Liquid			II.
	Number of Solid or Liquid	Phases of Separation		
	<u> </u>	Phases of Separation		11
	Number of Solid or Liquid Describe each phase of so 2. CHEMICAL ANALYS	I Phases of Separation eparation Sand	n One	
a. The results of a detailed chem instructions, is attached.	Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS ical characterization of the	Phases of Separation eparation Sand SIS ATTACHMENTS waste, as described	n One	
instructions, is attached.b. A detailed description of the w	Number of Solid or Liquid Describe each phase of solid or Liquid Describe each phase of solid or Liquid Phase of solid or Liquid Phase of solid or Liquid Phase of Solid Oracle Phase of Solid Phase of S	Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	in the	☑ Yes □ No
instructions, is attached.	Number of Solid or Liquid Describe each phase of solid or Liquid Describe each phase of solid or Liquid Phase of solid or Liquid Phase of solid or Liquid Phase of Solid Oracle Phase of Solid Phase of S	Phases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached.	in the	Yes No
instructions, is attached.b. A detailed description of the wc. The quality assurance/quality	Number of Solid or Liquid Describe each phase of s 2. CHEMICAL ANALYS ical characterization of the aste sampling method is a control procedures employ	Heases of Separation eparation. Sand SIS ATTACHMENTS waste, as described attached. The property of the laboratory (see the laboratory)	in the	Yes No Yes No Yes No

2540-PM-BWM0347 Rev. 1/2011

4.4	3.	PROCESS DESCRIPTION & SCHEMATIC	C ATTACHMENT	S		
а.	A detailed description of the the waste, as specified in the	manufacturing and/or pollution contro instructions, is attached.	ol processes pr	oducing	⊠ Yes	☐ No
b.	A schematic of the manufacture as specified in the instruction	uring and/or pollution control process ns, is attached.	ses producing t	he waste,	⊠ Yes	☐ No
C.		submitted are confidential, the substactions in the instructions, is attached		Yes	☐ No	⊠ N/A
	SECTION	ON C. MANAGEMENT OF RI	ESIDUAL W	ASTE		
		1. Processing or Disposal Fac				
The ar	ea below (ad.) will accommod	late the identification of two facilities.	Attach addition	nal sheets i	f necessary	
а.	100361	for processing or disposal facility be	eing utilized.			
b.	Facility Name	McKean County Landfill				
	Address Line 1	19 Ness Lane				
	Address Line 1	- DA		40705		
	Address City State ZIP Municipality	Kane PA Kane Cou	nty McKe	16735		
			Inty IVICINE	arı		
C.	Facility Contact Name	Mike Manderfeld				
	Title Phone	General Manager 814-778-9931 Email Add	Irace mand	erfeld@gma	ail aam	
				епеиседть	all.com	
d.	645	rocessing or disposal facility in the p cu yd gal b	⊠ ton	(check one)		
a.		for processing or disposal facility be	eing utilized.			
b.	Facility Name					
	Address Line 1					
	Address Line 1 Address City State ZIP					
	Municipality	Cou	ntv			
c.	Facility Contact Name					
0.	Title					
	Phone	Email Add	Iress			
d.	Volume of waste shipped to p	rocessing or disposal facility in the p	revious year.			
			_	(check one)		
		cu yd gal b	ton	(CHECK OHE)		
	<u> </u>	2. BENEFICIAL USE	ton	(Check one)	□ Vaa	N/ N/-
a.	Has the waste been approved	2. BENEFICIAL USE for beneficial use?	L) ton	(Check one)	Yes	⊠ No
a. b.	Has the waste been approved	2. BENEFICIAL USE for beneficial use? it number or approval number.	ton	(Check One)	Yes	No No

	SECTION D. CERTIFICATION						
Reportain obtain know	rt and all attached docu ning the information, I v ledge. I understand that	ments erify the s	ave personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my ubmission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.				
Checl	k the following, if applicat	le:					
	I certify the information and has not chan	-	red in Section B-1, General Properties was supplied to the Department for the year				
	Form Submitted:		Form 26R				
			Other (specify)				
	Date Submitted:						
	I certify the information and has not chan	-	red in Section B-2, Chemical Analysis was supplied to the Department for the year				
	Form Submitted:		Form 26R				
			Other (specify)				
	Date Submitted:						
	I certify the information if for the year and h	•	ed in Section B-3, Process Description and Schematic, was supplied to the Department changed.				
	Form Submitted:		Form 26R				
			Other (specify)				
	Date Submitted:						
Name	of Responsible Official		Title Environmental Specialist				
Dina	Brown						
Signa	ture		Mkm Date $2(25/11)$				

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10041150

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#:

10041150

1 of 4

PAGE:

PO#:

PHONE: FAX:

(607) 562-4000 (607) 562-4001 **TEST REPORT**

PWS ID#

Pad

RECEIVED FOR LAB BY: WCB DATE: 04/08/2010 12:32 Page 1 of 4

RECEIVED FOR LAB BY: WCB	DATE. (J4/U8/2010 12:32			ra	ige 1 01 4
SAMPLE: Flowback Sand		ab ID: 10041150-001B	Grab			
SAMPLED BY: SG	Sample	Time: 04/07/2010 20:30	SLOQ			
<u>Test</u>	Result	<u>Method</u>	<u>orog</u>	Analysis Start	Analysis End	Analyst *
Methanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Ethanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Isopropanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
t-Butanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
n-Propanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Isobutanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
n-Butanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Phosphorus	< 41.0 mg/Kg-dry	EPA 6010B	41.0	04/09/10 9:15	04/12/10	RMD-CV
Bromine	4.6 mg/kg	HACH 8167	0.05	04/12/10 15:23	04/12/10	SMH-CV
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	04/12/10 8:30	04/12/10	LTW-CV
Percent Moisture	3.7 %	SM2540G		04/13/10 17:25	04/14/10	DMB-CV
Total Petroleum Hydrocarbons	< 260 mg/Kg-dry	EPA 1664A	260	04/14/10 13:00	04/15/10	DTG-CV
SAMPLE: Flowback Sand	Li	ab ID: 10041150-001C	Grab			
SAMPLED BY: SG	Sample	Time: 04/07/2010 20:30				
T4	Decul	8.4 - AlI	<u>SLOQ</u>	A I :- Otaut	A to to To	A t t +
<u>Test</u>	Result	Method FDA 2000B	0.040	Analysis Start	Analysis End	Analyst *
1,1-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
2-Butanone	< 0.208 mg/Kg-dry	EPA 8260B	0.208	04/09/10 9:38	04/09/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range L
- Ammonia sample not distilled U

	//		
MANAGER	Carri M. Davis	DATE:	4/15/2010

Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave. Sayre, PA 18840

Work Order: 10041150

10041150

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PAGE: 2 of 4

PO#:

PWS ID#

WO#:

. 011.

TEST REPORT

PHONE: (607) 562-4000 FAX: (607) 562-4001

Pad

RECEIVED FOR LAB BY: WCB DATE: 04/08/2010 12:32 Page 2 of 4

Benzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- L Value above calibration range but within annually verified linear range
- U Ammonia sample not distilled

MANAGER	ani M. Davis	DATE:	4/15/2010
			AND

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

PAGE:

PO#:

PWS ID#

WO#:

Work Order: 10041150

10041150

3 of 4

TEST REPORT

Pad

PHONE:

FAX:

(607) 562-4000

(607) 562-4001

RECEIVED FOR LAB BY: WCB	DAT	E: 04/0	08/2010 12:32			Pa	age 3 of 4
SAMPLE: Flowback Sand SAMPLED BY: SG	Sal		D: 10041150-001D e: 04/07/2010 20:30	Grab . SLOQ			
Test	Result		Method	. <u>SLOQ</u>	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 0.50 mg/Kg		Glycols by 8015	0.50	04/09/10 0:00	04/13/10	
Propylene glycol	< 0.50 mg/Kg		Glycols by 8015	0.50	04/09/10 0:00	04/13/10	
Sample Note: Analysis performed	by Life Science						
SAMPLE: Flowback Sand		Lab I	D: 10041150-001E	Grab			
SAMPLED BY: SG	Sar	mple Time	e: 04/07/2010 20:30				
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	6.55 %		Moisture Calc.	0.01	04/13/10 14:00	04/14/10	NFM-SA
Ammonia as N	< 10 mg/kg-dry	υ	Lachat	10	04/15/10 12:07	04/15/10	KAL-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	04/14/10 11:30	04/14/10	IC-SA
pH	7.20@22.7°C		EPA 9045C	0.1	04/14/10 8:00	04/15/10	NFM-SA
SAMPLE: Flowback Sand		Lab IC	D: 10041150-001F	Grab			
SAMPLED BY: SG	Sar	nple Time	e: 04/07/2010 20:30				
Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	9.50 mg/Kg Dry		EPA 9065		04/13/10 10:30	04/13/10	Allalyst
Sample Note: Analysis performed			El A 3000		04/10/10 10.00	04/10/10	
SAMPLE: TCLP Leachate of Flowba	ack Sand	Lab IE	D: 10041150-001G	Grab			
SAMPLED BY: SG			e: 04/07/2010 20:30				
		•		<u>SLOQ</u>			
<u>Test</u>	Result		Method		Analysis Start	Analysis End	
Mercury - TCLP extracted	< 0.0008 mg/L		EPA 7470A	0.0008	04/12/10 9:30	04/13/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV
Barium - TCLP extracted	18.9 mg/L	L	EPA 6010B	10.00	04/12/10 10:25	04/12/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L		EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L		EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Ammonia sample not distilled

Carrie M. Davis DATE: 4/15/2010 **MANAGER**

Benchmark Analytics, Inc. **Eastern Division**

2566 Pennsylvania Ave.

Sayre, PA 18840

Work Order: 10041150

Phone: (570) 888-0169 Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley

COMPANY: Talisman Energy USA, Inc.

ADDRESS: 337 Daniel Zenker Dr

Horseheads, NY 14845

WO#: 10041150

PAGE:

4 of 4

PO#:

PWS ID#

TEST REPORT

PHONE: FAX:

(607) 562-4000 (607) 562-4001

Pad

RECEIVED FOR LAB BY: WCB

CEIVED FOR LAB BY: WCB	DATE: (04/08/2010 12:32			P	age 4 of 4
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	04/12/10 10:25	04/12/10	RMD-CV
Sample Note: The temperature of the	he extraction room exceeded	d the range of 23 + 2°C				

REMARKS:

- * CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA
- Value above calibration range but within annually verified linear range
- Ų Ammonia sample not distilled

MANAGER	Carri M. Davis	DATE:	4/15/2010



TALISMAN ENERGY USA INC.

50 Pennwood Place Warrendale, Pennsylvania 15086

Tel: (724) 814-5300 Fax: (724) 814-5301

February 28, 2011

Pennsylvania Department of Environmental Protection Northcentral Regional Office Bureau of Waste Management 208 W. 3rd Street, Suite 101 Williamsport, PA 17701

RE: Submittal of Form 26R Chemical Analysis of Residual Waste Annual Report by the Generator for 2010

To Whom It May Concern:

Please find enclosed Talisman Energy USA Inc.'s Form 26R Chemical Analysis of Residual Waste Annual Report by the Generator for 2010. Should you have any questions or comments concerning our reports please do not hesitate to contact me at (724) 814-5321 or dybrown@talismanusa.com.

Sincerely,

Dina E. Brown

Environmental Specialist

Enclosures



each a	or legib attache	oly printed in the space d sheet as Form 26R,	ately completed. All requise provided. If additional sportering reference the item numbets needs to match the date	ace is necessary, ide er and identify the	ntify Date Re	DEP USE (eceived & G	ONLY eneral Notes
Gener	al Refe	rence 287.54					
Date P	repare	d/Revised Fe	bruary 11, 2011				
		SECTION A.	CLIENT (GENERATOR	R OF THE WASTE)	NFORMATIC	N	
	any Nar						
		ergy USA Inc.					
		y, Name of Parent Com	pany	•		EPA Gene	rator ID#
		ergy Inc.				V/A	-
		ling Address Line 1 d Place	C	ompany Mailing Addr	ess Line 2		
		dress Last Line City	State	Zip+4	Phone		Ext
Warre		iress Last Line - Only	PA	15086	(724) 814	-5300	EXI
		ntact Last Name	First Name	MI		Suffix	
Brown	-	ILLOT ELOT ITALIA	Dina	••••	`	Juina	
Munici				County			
Warre				Allegheny			
	t Phon	e Ext	Contact Email Address				
	314-53		dybrown@talismanusa.c				
			ny Mailing Address (noted a			Yes	⊠ No
			neration and storage. Wast				
			ed at 374 Fellows Creek Roa	<u>ld in Ward Township, T</u>	<u>ioga County, PA.</u>	The wast	e is
tempor	arily sto	red in tanks onsite.					
Munici	nality	Ward	County Tioga		State	PA	
- Widilion	panty	vvalu ,		E DESCRIPTION		17	
Resid	dual	. :	SECTION D. WASI	L DESCRIPTION	Unit of		Time
		Resid	ual Waeto				
***			ual Waste Description	Amount			
	Code	Code I	Description	Amount	Measure	gal	Frame
808			Description	Amount 93	Measure	gal	Frame
		Code I	Description	93	Measure ☐ cu yd ☐		
		Code I Servicing Fluid, Oil/w	Description ater emulsion 1. GENERAL P	93	Measure cu yd lb		Frame
808	Code pH Rai	Code I Servicing Fluid, Oil/w	Description ater emulsion 1. GENERAL P	93 ROPERTIES (based on analyses or	Measure cu yd lb		Frame
808 a.	Code pH Rai	Code I Servicing Fluid, Oil/w	Description ater emulsion 1. GENERAL P to 7	93 ROPERTIES (based on analyses or thod 9095)	Measure cu yd lb		Frame
808 a.	Code pH Rai	Code I Servicing Fluid, Oil/w	Description ater emulsion 1. GENERAL P to 7 Liquid Waste (EPA Me	93 ROPERTIES (based on analyses or thod 9095) 95)	Measure cu yd lb		Frame
808 a.	pH Rai	Code I Servicing Fluid, Oil/w	Description ater emulsion 1. GENERAL P to 7 Liquid Waste (EPA Me	POPERTIES (based on analyses or thod 9095) 95) ture & pressure)	Measure □ cu yd □ □ lb □ knowledge)	ton 🗆	Frame
808 a. b.	pH Rai	Code I Servicing Fluid, Oil/w nge 6 cal State	Description ater emulsion 1. GENERAL P to 7 Liquid Waste (EPA Me Solid (EPA Method 909) Gas (ambient tempera	POPERTIES (based on analyses or thod 9095) 95) ture & pressure) (low/brown Od	Measure □ cu yd □ □ lb knowledge) or hydrocarb	ton 🗆	Frame
808 a. b.	pH Rai	Code I Servicing Fluid, Oil/w nge 6 cal State	Description ater emulsion 1. GENERAL P to 7 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperat Color translucent yellows	POPERTIES (based on analyses or thod 9095) (bture & pressure) (bow/brown Odd Phases of Separatio	Measure cu yd lb knowledge) or hydrocarb 2	ton 🗆	Frame
808 a. b.	pH Rai	Code I Servicing Fluid, Oil/w nge 6 cal State	Description ater emulsion 1. GENERAL P to 7 Liquid Waste (EPA Me Solid (EPA Method 909 Gas (ambient temperate) Color translucent yell Number of Solid or Liquid Describe each phase of se	POPERTIES (based on analyses or thod 9095) (b5) (bc) (bc) (bc) (bc) (bc) (bc) (cc) (cc	Measure cu yd lb knowledge) or hydrocarb 2	ton 🗆	Frame
808 a. b.	pH Ran Physic	Code I Servicing Fluid, Oil/w nge 6 cal State cal Appearance	To 7 Liquid Waste (EPA Me Solid (EPA Method 90) Gas (ambient temperate Color translucent yellow) Describe each phase of section 1. CHEMICAL ANALYS	POPERTIES (based on analyses or thod 9095) (bture & pressure) (llow/brown Odd Phases of Separation Paration Attachments	Measure cu yd lb showledge) or hydrocarb 2 Solid	oon	One Time
808 a. b.	Physical Phy	Servicing Fluid, Oil/winge 6 cal State cal Appearance sults of a detailed chemetions, is attached.	To 7 Liquid Waste (EPA Me Solid (EPA Method 90%) Gas (ambient temperate Color translucent yellow) Number of Solid or Liquid Describe each phase of solid characterization of the	POPERTIES (based on analyses or thod 9095) (based on analyses or t	Measure cu yd lb showledge) or hydrocarb 2 Solid	ton 🗆	Frame
808 a. b.	Physical Phy	Servicing Fluid, Oil/winge 6 cal State cal Appearance sults of a detailed chemicitions, is attached.	The state of the s	POPERTIES (based on analyses or thod 9095) (bure & pressure) (low/brown Odd Phases of Separation Phases of Separat	Measure cu yd lb showledge) or hydrocarb 2 Solid in the	oon	One Time No No
808 a. b. c.	Physical Phy	Servicing Fluid, Oil/winge 6 cal State cal Appearance sults of a detailed chemications, is attached. iled description of the viality assurance/qualityed.	The state of the s	POPERTIES (based on analyses or thod 9095) (bure & pressure) (low/brown Od Phases of Separation Phases of Separati	Measure cu yd lb showledge) or hydrocarb 2 Solid in the	oon Yes	One Time No
a. b. a. b.	Physical Phy	Servicing Fluid, Oil/winge 6 cal State cal Appearance sults of a detailed chemications, is attached. iled description of the viality assurance/qualityed.	The state of the s	POPERTIES (based on analyses or thod 9095) (bure & pressure) (low/brown Odd Phases of Separation Phases of Separat	Measure cu yd lb showledge) or hydrocarb 2 Solid in the	oon Yes	One Time No No

2540-PM-BWM0347 Rev. 1/2011

		PROCESS DESCRIPTION &					
а.	A detailed description of the the waste, as specified in the		ution control proce	sses producing	⊠ Yes		No
b.	A schematic of the manufactor as specified in the instruction		rol processes prod	lucing the waste,	⊠ Yes		No
c.	If portions of the information a confidentiality claim, as de			n for 🔲 Yes	☐ No	\boxtimes	N/A
	SECTION	ON C. MANAGEMEN					
The or	ea below (ad.) will accommod	PROCESSING OR DIS Identification of two			if nooccoor		
	, ,					•	
а.	Solid waste permit number(s) 8-0728-00004/00013	for processing or disposa	ii facility being utili	izea.			
b.	Facility Name	Chemung County Landf	ill				
	Address Line 1	1690 Lake Street					
	Address Line 1						
	Address City State ZIP	Elmira	NY	14903			
	Municipality	Elmira City	County	Chemung			
c.	Facility Contact Name	Carla Canjar					
	Title	Environmental Manager					
	Phone	(585) 797-5941	Email Address	carla.canjar@cas	sella.com		
d.	Volume of waste shipped to p	cu yd 🔲 gal 📗] lb ⊠ ton	(check one)			
d. a.		cu yd 🔲 gal 📗] lb ⊠ ton	(check one)			
	24 Solid waste permit number(s)	cu yd 🔲 gal 📗] lb ⊠ ton I facility being utili	(check one)			
a.	Solid waste permit number(s) PA301344	cu yd gal for processing or disposa	☐ Ib ☑ ton I facility being utili y Corporation of P.	(check one)			
a.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address Line 1	cu yd gal gal for processing or disposa	Ib X ton If facility being utili Y Corporation of P.	(check one)			
a.	Solid waste permit number(s) PA301344 Facility Name Address Line 1	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike	Ib ⊠ ton If facility being utili y Corporation of P. PA	(check one)			
a.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address Line 1	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike	Ib X ton If facility being utili Y Corporation of P.	(check one) zed. A			
a.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address City State ZIP	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike	Ib ⊠ ton If facility being utili y Corporation of P. PA	(check one) zed. A 17601			
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address City State ZIP Municipality	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike Lancaster City of Lancaster Terry Leatherman General Manager	Ib Ston	(check one) zed. A 17601 Lancaster			
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike Lancaster City of Lancaster Terry Leatherman	Ib ⊠ ton If facility being utili y Corporation of P. PA	(check one) zed. A 17601	n		
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike Lancaster City of Lancaster Terry Leatherman General Manager (717) 393-2627 rocessing or disposal facil	Ib ton I facility being utili y Corporation of P. PA County Email Address lity in the previous	(check one) zed. A 17601 Lancaster info@ercofpa.cor year.	n		
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike Lancaster City of Lancaster Terry Leatherman General Manager (717) 393-2627	Ib ton I facility being utili y Corporation of P PA County Email Address	(check one) zed. A 17601 Lancaster info@ercofpa.cor year.	n		
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p 69	cu yd	Ib ton If facility being utility y Corporation of P. PA County Email Address lity in the previous lib ton	(check one) zed. A 17601 Lancaster info@ercofpa.cor year.	n		
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p	cu yd	Ib ton If facility being utility y Corporation of P. PA County Email Address lity in the previous lib ton	(check one) zed. A 17601 Lancaster info@ercofpa.cor year.	m Yes	1	No
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p 69	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike Lancaster City of Lancaster Terry Leatherman General Manager (717) 393-2627 rocessing or disposal faci cu yd gal gal 2. BENEFIC for beneficial use?	Ib ton I facility being utili y Corporation of P. PA County Email Address lity in the previous Ib ton	(check one) zed. A 17601 Lancaster info@ercofpa.cor year.			No
a. b.	Solid waste permit number(s) PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to p 69	cu yd gal gal for processing or disposa Environmental Recovery 1076 Old Manheim Pike Lancaster City of Lancaster Terry Leatherman General Manager (717) 393-2627 rocessing or disposal facil cu yd gal gal 2. BENEFIC for beneficial use? t number or approval num	Ib ton I facility being utili y Corporation of P. PA County Email Address lity in the previous Ib ton	(check one) zed. A 17601 Lancaster info@ercofpa.cor year.		1	No

		SECTION D. CERTIFICATION
Report and all attached doc obtaining the information, I knowledge. I understand the	uments verify at the s	nave personally examined and am familiar with the information submitted in this Annual and that based upon my inquiry of those individuals immediately responsible for that the submitted information is true, accurate and complete to the best of my submission of false information herein is made subject to the penalties of 18 Pa. C.S. on to authorities, which include fine and imprisonment.
Check the following, if applica	able:	
I certify the information	•	ired in Section B-1, General Properties was supplied to the Department for the year
Form Submitted:		Form 26R
		Other (specify)
Date Submitted:		
I certify the information	•	ired in Section B-2, Chemical Analysis was supplied to the Department for the year
Form Submitted:		Form 26R
		Other (specify)
Date Submitted:		
I certify the information for the year and	•	ed in Section B-3, Process Description and Schematic, was supplied to the Department t changed.
Form Submitted:		Form 26R
		Other (specify)
Date Submitted:		
Name of Responsible Official		Title Environmental Specialist
Dina Brown		
Signature	- 5	Date 2(25/11



typed each	or legib attache	ly printed in the d sheet as Form	spaces n 26R, <i>ı</i>	tely completed. All requestion provided. If additional spaces the item numbers needs to match the date	pace is necessary, iden per and identify the d	tify Date Receive	USE ONLY ed & General Notes
Gener	al Refer	ence 287.54					
Date P	repared	/Revised	Feb	ruary 11, 2011		ĺ	
:		SECTIO	NA.	CLIENT (GENERATOR	R OF THE WASTE) II	NFORMATION	
	any Nar						
		ergy USA Inc.					
		y, Name of Paren	t Compa	any		N/A	Generator ID#
		ergy Inc. Iing Address Lin	<u> </u>		ompany Mailing Addre		
	nnwood		- 1	C	ompany Maning Addre	55 Lille 2	
		Iress Last Line –	City	State	Zip+4	Phone	Ext
Warre			,	PA	15086	(724) 814-530	
		tact Last Name		First Name	MI	Suffi	
Brown				Dina			
Munici					County		
Warre	t Phon	e Ex	+	Contact Email Address	Allegheny		
	314-532			dybrown@talismanusa.d	com		
				y Mailing Address (noted			Yes No
				eration and storage. Wast		compressors at the	
				93 Buckwheat Road, Troy			s temporarily stored
in tanks	s onsite.						
Munici	pality	Troy		County Bradfo	ord	State	PA
	<u> </u>			SECTION B. WAST			
Resi	dual			al Waste		Unit of	Time
Waste	Code		Code De	escription	Amount	Measure	Frame
808		Servicing Fluid	Oil/wat	ter emulsion	327	☐ cu yd ☐ gal ☐ lb	One Time
				1. GENERAL P	POPERTIES	□ ID ☑ KOU	<u> </u>
a.	pH Rai		6	to 7	(based on analyses or k	nowledge)	
b.		al State		Liquid Waste (EPA Me			
	,			Solid (EPA Method 90			
		•		Gas (ambient tempera	•		
c.	Physic	al Appearance		Color translucent ye	llow/brown Odd	r Hydrocarbon	
	_			Number of Solid or Liquid	d Phases of Separation	2	· · · · · · · · · · · · · · · · · · ·
				Describe each phase of s	eparation. Liquid and		
	- <u></u>			2. CHEMICAL ANALYS			
a.		sults of a detailed tions, is attache		cal characterization of the	e waste, as described in	n the	Yes 🛛 No
b.				aste sampling method is a	attached.		Yes No
c.	The quattache		quality c	ontrol procedures emplo	yed by the laboratory(i	es) is	Yes 🛛 No
d.			dous w	aste determination is atta	ched.	X	Yes No
е.				ation supporting use of ge			No N/A
		actual chemical			•		

		. PROCESS DESCRIPTION & SC				
a.	A detailed description of the the waste, as specified in the	manufacturing and/or pollution in manufacturing and/or pollution in manufactions, is attached.	on control proce	esses producing	Yes	☐ No
b.	A schematic of the manufact as specified in the instruction	turing and/or pollution control ons, is attached.	processes proc	ducing the waste,		☐ No
C.	If portions of the information	submitted are confidential, th	ne substantiatio	n for Yes	□ No	N/A
U.	a confidentiality claim, as de	escribed in the instructions, is	attached.			
	SECTI	ON C. MANAGEMENT				
		1. PROCESSING OR DISPO				
The a	ea below (ad.) will accommo	date the identification of two f	acilities. Attach	n additional sheets	if necessary	'.
a.	08-0728-00004/00013	s) for processing or disposal f	acility being util	ized.		
b.	Facility Name	Chemung County Landfill				
	Address Line 1	1690 Lake Street				
	Address Line 1					
	Address City State ZIP	Elmira	NY	14903		
	Municipality	Elmira	County	Chemung		
c.	Facility Contact Name	Carla Canjar				
	Title	Environmental Manager				
	Phone	585-797-5941 E i	nail Address	carla.canjar@ca	colla com	
	Filone	363-797-3941 LI	nan Address	cana.canjar@ca	Selia.CUIII	
d.	Volume of waste shipped to	processing or disposal facility cu yd gal	vin the previous Ib ⊠ ton	s year. (check one)		
d. a.	Volume of waste shipped to	processing or disposal facility	vin the previous Ib ⊠ ton	s year. (check one)		
	Volume of waste shipped to 165 Solid waste permit number(s	processing or disposal facility cu yd gal gal for processing or disposal facility	r in the previous Ib \times ton acility being utili	s year. (check one) ized.		
а.	Volume of waste shipped to 165 Solid waste permit number(s PA301344	processing or disposal facility cu yd gal solonial for processing or disposal facility	r in the previous Ib \times ton acility being utili	s year. (check one) ized.		
а.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1	processing or disposal facility cu yd gal gal for processing or disposal facility	vin the previous Ib ⊠ ton acility being utili corporation of P	s year. (check one) ized.		
а.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address City State ZIP	processing or disposal facility cu yd gal gal for processing or disposal facility	vin the previous b	s year. (check one) ized.		
а.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1	processing or disposal facility cuyd gal gal for processing or disposal facility Environmental Recovery C 10760 Old Manheim Pike	vin the previous Ib ⊠ ton acility being utili corporation of P	s year. (check one) ized.		
а.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address City State ZIP	processing or disposal facility cuyd gal gal for processing or disposal facility Environmental Recovery C 10760 Old Manheim Pike Lancaster	vin the previous b	ized. 2A 17601		
a. b.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	processing or disposal facility cu yd	vin the previous b	ized. 2A 17601 Lancaster		
a. b.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	processing or disposal facility cuyd gal s) for processing or disposal facility Environmental Recovery C 10760 Old Manheim Pike Lancaster City of Lancaster Terry Leatherman General Manager	vin the previous b	ized. 2A 17601		
a. b.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	processing or disposal facility cu yd	r in the previous b	ized. 2A 17601 Lancaster info@ercofpa.co.		
a. b.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	processing or disposal facility cu yd	r in the previous b	ized. 2A 17601 Lancaster info@ercofpa.com	m	
a. b. c.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to 162	processing or disposal facility cu yd	r in the previous b	ized. 2A 17601 Lancaster info@ercofpa.com	m	
a. b.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to 162 Has the waste been approved	processing or disposal facility cu yd	r in the previous b	ized. 2A 17601 Lancaster info@ercofpa.com	m	No
a. b. c.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to 162 Has the waste been approved If "Yes", list the general perm	processing or disposal facility cu yd	r in the previous b	ized. 2A 17601 Lancaster info@ercofpa.com	m	No
a. b. c.	Volume of waste shipped to 165 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to 162 Has the waste been approved	processing or disposal facility cu yd	r in the previous b	ized. 2A 17601 Lancaster info@ercofpa.co. 3 year. (check one)	m Yes	No No

SECTION D. CERTIFICATION
I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.
Check the following, if applicable:
I certify the information required in Section B-1, General Properties was supplied to the Department for the year and has not changed.
Form Submitted:
Other (specify)
Date Submitted:
I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year and has not changed.
Form Submitted: Form 26R
Other (specify)
Date Submitted:
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year and has not changed.
Form Submitted:
Other (specify)
Date Submitted:
Name of Responsible Official Title Environmental Specialist
Dina Brown
Signature



typed o	or legib ittache	oly printed in the sp ed sheet as Form	oaces pr 26R, ref	ovided. If additional s	uired information mus pace is necessary, ide ber and identify the te noted below.	ntify D		USE C	eneral Notes
Genera	l Refe	rence 287.54							
Date Pr	repare	d/Revised	Februa	ary 11, 2011					
			A. C	LIENT (GENERATO	R OF THE WASTE) I	NFORM	ATION		
Compa									
		ergy USA Inc. y, Name of Parent (ompan				EDA	Cono	rator ID#
		ergy Inc.	onipan	у			N/A	Gene	rator 10#
		iling Address Line			Company Mailing Addr	ace Line 2	IN/A		
50 Pen				`	Company Mannig Addi	CSS LINE Z			
		dress Last Line – C	ity	State	Zip+4	Phor	ne		Ext
Warren			-	PA	15086	(724) 814-530	00	
Compa	ny Cor	ntact Last Name		First Name	MI		Suffix	X	
Brown				Dina					
Municip					County				
Warren					Allegheny				
Contact			_	ontact Email Address					
(724) 8				ybrown@talismanusa. Mailing Address (noted				Yes	⊠ No
					ste is generated from the	compresso	re at the	165	
11 140,0					lumbia Township, Bradfo			vaste	is temporarily
stored in			<u> </u>				. 711 1110 1	14010	io temperanty
Municip	pality	Columbia		County Brad			State	PA	
Municip	pality			ECTION B. WAS	ford TE DESCRIPTION			PA	
Resid	ual	R	esidual	ECTION B. WAS'	TE DESCRIPTION	l Unit	t of	PA	Time
	ual	R		ECTION B. WAS'		Unit Meas	t of sure	PA	Time Frame
Resid	ual	R	esidual de Desc	ECTION B. WAS' Waste cription	TE DESCRIPTION	l Unit	t of sure	PA	Frame
Resid Waste (ual	, R Co	esidual de Desc	ECTION B. WAS' Waste cription	Amount 31	Unit Meas □ cu yd	t of sure	PA	
Resid Waste 0	ual	R Co Servicing Fluid, C	esidual de Desc	ECTION B. WAS Waste cription r emulsion	Amount 31	Unit Meas Cu yd	t of sure	PA	Frame
Resid Waste (808	lual Code pH Rai	R Co Servicing Fluid, C	esidual de Desc)il/wateı	Waste cription r emulsion 1. GENERAL	Amount 31 PROPERTIES (based on analyses or	Unit Meas Cu yd	t of sure	PA	Frame
Resid Waste (808	lual Code pH Rai	R Co Servicing Fluid, C	esidual de Desc Dil/water	Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 96)	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095)	Unit Meas Cu yd	t of sure	PA	Frame
Resid Waste (808	lual Code pH Rai	R Co Servicing Fluid, C	esidual de Desc Dil/water	Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095)	Unit Meas Cu yd	t of sure	PA	Frame
Resid Waste (808 a. b.	ual Code pH Rai Physic	R Co Servicing Fluid, C	esidual de Desc Dil/water	Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90) Gas (ambient temperator) translucent year	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown Od	Unit Meas Cu yd Ib knowledge)	t of sure	PA	Frame
Resid Waste (808 a. b.	ual Code pH Rai Physic	Servicing Fluid, Conge	esidual de Desc Dil/water	Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90) Gas (ambient temperator) translucent year	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure)	Unit Meas Cu yd Ib knowledge)	t of sure gal	PA	Frame
Resid Waste (808 a. b.	ual Code pH Rai Physic	Servicing Fluid, Conge	esidual de Desc Dil/water 6	ECTION B. WAS Waste cription remulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90 Gas (ambient temperature) Umber of Solid or Liquid	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown Od	Unit Meas Cu yd Ib knowledge)	t of sure gal	PA	Frame
Resid Waste (808 a. b.	ual Code pH Rai Physic	Servicing Fluid, Conge	esidual de Desc Dil/water 6	ECTION B. WAS Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90 Gas (ambient temper polor translucent yeumber of Solid or Liquid escribe each phase of	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown od Phases of Separationseparation. Liquid and	Unit Meas Cu yd Ib knowledge)	t of sure gal	PA	Frame
Resid Waste (808 a. b.	pH Rai Physic	R Co Servicing Fluid, C nge cal State	esidual de Desc Dil/water 6 E Co Nu	Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90 Gas (ambient tempersumber of Solid or Liquid escribe each phase of 2. CHEMICAL ANALY	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown od Phases of Separation separation. Liquid and	Unit Meas cu yd lb knowledge) or hydro n 2 Solid	t of sure gal Ston		One Time
Resid Waste (808 a. b.	pH Rai Physic	R Co Servicing Fluid, C nge cal State	esidual de Desc Dil/water 6 E Co Nu	Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90 Gas (ambient tempersumber of Solid or Liquid escribe each phase of 2. CHEMICAL ANALY	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown od Phases of Separationseparation. Liquid and	Unit Meas cu yd lb knowledge) or hydro n 2 Solid	t of sure gal Ston	PA	Frame
Resid Waste (808 a. b. c.	pH Ran Physic Physic The resinstruc A deta	Servicing Fluid, Conge cal State cal Appearance sults of a detailed cotions, is attached. iled description of the congression o	esidual ide Desc Dil/water 6 Co No De	Waste cription remulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90) Gas (ambient temperator translucent yearmber of Solid or Liquid escribe each phase of 2. CHEMICAL ANALY I characterization of the sampling method is	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown oid Phases of Separation separation. Liquid and rSIS ATTACHMENTS le waste, as described attached.	Unit Meas cu yd lb knowledge) or hydron 2 Solid in the	t of sure gal Ston		One Time
Resid Waste (808 a. b. c.	pH Rai Physic Physic The re- instruct A deta The qu	Servicing Fluid, Conge cal State cal Appearance sults of a detailed cotions, is attached. iled description of tality assurance/qui	esidual ide Desc Dil/water 6 Co No De	Waste cription remulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90) Gas (ambient temperator translucent yearmber of Solid or Liquid escribe each phase of 2. CHEMICAL ANALY I characterization of the sampling method is	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown od Phases of Separation separation. Liquid and VSIS ATTACHMENTS the waste, as described	Unit Meas cu yd lb knowledge) or hydron 2 Solid in the	t of sure gal \text{ gal ton}	Yes	One Time No
Resid Waste (808 a. b. c. a. ib. c. a.	pH Rai Physic Physic The re- instruct A deta The quattache	Servicing Fluid, Conge cal State cal Appearance sults of a detailed cotions, is attached, iled description of tality assurance/queed.	esidual de Desc Dil/water 6 Co Nu De	Waste cription remulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90) Gas (ambient temperator translucent yearmber of Solid or Liquid escribe each phase of 2. CHEMICAL ANALY I characterization of the sampling method is	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown oid Phases of Separation separation. Liquid and VSIS ATTACHMENTS le waste, as described attached. byed by the laboratory(Unit Meas cu yd lb knowledge) or hydron 2 Solid in the	gal don	Yes	One Time No No
Resid Waste (808) a. b. c. ib. c. a. d. e. I	pH Rai Physic Physic The rei instruct A detai The quattache The res	Servicing Fluid, Conge cal State cal Appearance cal description of the lality assurance/quied.	esidual ide Desc Dil/water 6 Co Nu De chemica che was ality cor ous was cplanatio	Waste cription r emulsion 1. GENERAL to 7 Liquid Waste (EPA M Solid (EPA Method 90) Gas (ambient temperature of Solid or Liquid escribe each phase of 2. CHEMICAL ANALY I characterization of the te sampling method is introl procedures employed to supporting use of general ending the determination is attached to supporting use of general ending to the sampling use of general ending the determination is attached to supporting use of general ending the determination is attached to the sampling use of general ending the determination is attached to the sampling use of general ending the determination is attached to the sampling use of general ending the sampling the sampling the sampling use of general ending the sampling the	Amount 31 PROPERTIES (based on analyses or lethod 9095) 095) ature & pressure) ellow/brown oid Phases of Separation separation. Liquid and VSIS ATTACHMENTS le waste, as described attached. byed by the laboratory(Unit Meas Cu yd Ib knowledge) or hydro 2 Solid in the ies) is	gal Special sp	Yes	No No No

3. Process Description & Schematic Attachments								
a.	A detailed description of the manufacturing and/or pollution control processes producing Yes No the waste, as specified in the instructions, is attached.							
b.	A schematic of the manufac as specified in the instruction		ontrol processes pro	ducing the waste,	⊠ Yes	☐ No		
c.	If portions of the information submitted are confidential, the substantiation for Yes No N/A a confidentiality claim, as described in the instructions, is attached.							
SECTION C. MANAGEMENT OF RESIDUAL WASTE								
1. Processing or Disposal Facility(ies)								
The ar	ea below (ad.) will accommo	date the identification of	two facilities. Attach	n additional sheets	if necessary	·		
a.	Solid waste permit number(s 8-0728-00004/00013	s) for processing or dispo	osal facility being util	ized.				
b.	Facility Name	Chemung County Lar	ndfill					
	Address Line 1	1690 Lake Street						
	Address Line 1							
	Address City State ZIP	Elmira	NY	14903				
	Municipality	Elmira City	County	Chemung				
c.	Facility Contact Name	Carla Canjar						
	Title	Environmental Manag	ger					
	Phone	585-797-5941	Email Address	carla.canjar@cas	sella.com			
d.	Volume of waste shipped to 9	cu yd 🔲 gal	☐ lb 🛛 tor	(check one)				
d. a.	· · · · · · · · · · · · · · · · · · ·	cu yd 🔲 gal	☐ lb 🛛 tor	(check one)				
	9 Solid waste permit number(s	cu yd gal for processing or dispo	□ lb ☑ tor sal facility being util ery Corporation of F	ized.				
а.	9 Solid waste permit number(s PA301344 Facility Name Address Line 1	cu yd gal for processing or dispo	□ lb ☑ tor sal facility being util ery Corporation of F	ized.				
а.	9 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P	Ib itor sal facility being util ery Corporation of Fike	ized.				
а.	Solid waste permit number(s PA301344 Facility Name Address Line 1 Address City State ZIP	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P	Ib itor sal facility being util ery Corporation of Fike PA	ized. PA 17601				
а.	9 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P Lancaster City of Lancaster	Ib itor sal facility being util ery Corporation of Fike	ized.				
а.	9 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P Lancaster City of Lancaster Terry Leatherman	Ib itor sal facility being util ery Corporation of Fike PA	ized. PA 17601				
a. b.	Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P Lancaster City of Lancaster Terry Leatherman General Manager	Ib	ized. PA 17601 Lancaster				
a. b.	9 Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P Lancaster City of Lancaster Terry Leatherman	Ib itor sal facility being util ery Corporation of Fike PA	ized. PA 17601				
a. b.	Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P Lancaster City of Lancaster Terry Leatherman General Manager 717-393-2627 processing or disposal fa	ery Corporation of Fike PA County Email Address acility in the previous	ized. PA 17601 Lancaster info@ercofpa.com	m			
a. b.	Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone	cu yd gal for processing or dispo Environmental Recov 1076 Old Manheim P Lancaster City of Lancaster Terry Leatherman General Manager 717-393-2627	Ib tor sal facility being util ery Corporation of Fike PA County Email Address	ized. PA 17601 Lancaster info@ercofpa.com	m			
a. b.	Solid waste permit number(s PA301344 Facility Name Address Line 1 Address Line 1 Address City State ZIP Municipality Facility Contact Name Title Phone Volume of waste shipped to	Environmental Recovemental Reco	ery Corporation of Fike PA County Email Address acility in the previous	ized. PA 17601 Lancaster info@ercofpa.com	m			
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		SECTION D. CERTIFICATION						
I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.								
Check the following, if applicable:								
I certify the information required in Section B-1, General Properties was supplied to the Department for the year and has not changed.								
Form Submitted:		Form 26R						
		Other (specify)						
Date Submitted:								
I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year and has not changed.								
Form Submitted:		Form 26R						
		Other (specify)						
Date Submitted:								
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year and has not changed.								
Form Submitted:		Form 26R						
		Other (specify)						
Date Submitted:								
Name of Responsible Official		Title Environmental Specialist						
Dina Brown Signature	3	Date 2/25/11						
	-							